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FEWER AND BETTER DIETS[1]

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IT IS fair to say that most hospitals have too many special diets in their official dietary lists. In our own medical clinic we have a great preference for the "regular" or "general" diet which is an excellent one in our hospital. We are apprehensive when we have to depart from this diet and do so only when strictly necessary. We point with pride to all the special diets we never use.

I am tilting at the windmills of fancy, special diets. In our own hospital and in most other hospitals the dietitians are so cooperative and so obliging that they will add to the list almost any diet requested by one of the attending doctors. Acceptance of a special diet usually depends on the doctor's rank and vehemence rather than his knowledge of nutrition. Hence the multiplicity of special diets—windmills, not mills of the Gods.

Diets were simple in the old days when New York Hospital was young. I have in my office a copy of the Pharmacopoeia of our hospital printed in 1816. Five pages are devoted to diet, and I shall quote them as a contrast to 136 pages in our recent *Handbook of Applied Nutrition.*

[1] Read before the General Session, American Dietetic Association, New York, October 21, 1940.

THE DIET OF THE NEW YORK HOSPITAL

As in the army and navy, so in this institution, various experiments had been discreetly made, to ascertain the best mode of sustaining and supporting those under its care.

The plan of diet was changed at different times, between the years 1789 and 1806, in order to discover, by actual trial, that one which united economy with health; or, in other words, the one which combined a proper regard to frugality in administering the funds of the hospital, with a due respect to the comfort of the patients.

On this subject the physicians and surgeons zealously cooperated with the governors; and, after divers expedients had been fairly tried, the following bill of fare was agreed upon November 14, 1806, as the diet table for patients.

In this allowance it is understood that bread and salt are issued to the satisfaction of the patients.

For Breakfast Daily

Rye Coffee with half a gill of milk, and sweetened with sugar; or, Indian gruel, sweetened with molasses or sugar.

The difference between gruel and mush has only reference to its consistence.

Dinner

On Mondays, Wednesdays, Fridays, and Saturdays rice with molasses or milk, and an ounce of butter to each patient. On Sundays, Tuesdays, and Thursdays, meat and soup with vegetables.

Supper

On Mondays, Wednesdays, Fridays, and Saturdays the same as for breakfast. On Sundays, Tuesdays, and Thursdays common tea sweetened with sugar, and half a gill of milk.

It is understood that roasted and broiled meats, and other things than those above-mentioned, are only dispensed to the patients by the special order of the physicians and surgeons.

Such is the standing rule governing the diet of the New York Hospital; certain alterations have, nevertheless, been made informally in this respect. For example, during the interruption of the coasting trade by the war, which existed between June 1812 and February 1815, it was found necessary to diminish the quantity of rice. Sugar and molasses also grew extravagantly dear. In lieu of rice and its condiment; soup of beef with savoury herbs, esculent roots, and maize dumplings has been generally substituted.

Further alterations have been gradually made from the exercise of allowable discretion, and for the purpose of a salutary change for the patients. These modifications bring the actual bill of fare to the following particulars, to wit:

Breakfast Daily

Bohea tea, with milk and sugar, with the addition of an ounce of butter for each person on Sundays and Wednesdays, those being the days when there is no animal food for dinner.

Dinner

On Sundays and Wednesdays, mush and molasses. On Mondays, Tuesdays, Thursdays, Fridays, and Saturdays heads, necks, shoulders, and shins of beef made into soup with aromatic herbs, palatable seasoning, Indian dumplings, and other additions of nourishing and wholesome vegetables.

Supper Daily

Mush and molasses, or mush and milk, as best suits the convenience of the household.

If more milk than the ordinary allowance, or if spirits, beer, or wine are, by the prescribing physician or surgeon, judged necessary for any patient, the quantity and kind ordered by him are recorded in the book of the house physician or house surgeon. These entries are laid before the superintendent, whose duty is to issue the articles accordingly.

For the convenience of practice, and the methodical treatment of the patients, their dietetic regimen is distributed under three distinct heads:

I. Diaeta Tenuis (Spare Diet)

It consists of panado, barley water, gruel of maize or oatmeal, toast-water, apple-infusion, chicken-water, and infusions of various aromatic farinaceous, and saccharine vegetables such as balm, sage, lint-seed, tamarinds, figs, and of thin ptisanes.

II. Diaeta Media (Common Diet)

This has already been detailed at full length. It is the ordinary allowance of the hospital; and is understood to be dealt out to the patients unless otherwise directed by the prescriber.

III. Diaeta Lauta (Full Diet)

Milk boiled or crude, with toasted bread, mush, rice, or thickened with

flour; or combined with eggs into pudding or custard. Eggs raw, poached, boiled, or fried, with their numerous modifications into nutritious compounds. Broiled chicken, ham, fish, beef-steaks, oysters, roast-beef, mutton in its various rich alimentary forms, wine-whey, mulled-wine, spiced wine, the discreet use of wine with water, a glass drank pure now and then by convalescents and patients extremely debilitated, or taken as a vehicle for Peruvian bark, and an accompaniment for other medicines. Ale, beer, and porter in due proportion, and under suitable directions as to the quantity and their repetition. Spirits cautiously ordered and carefully administered, according to the habits, exigencies, and symptoms of the patient; with such other nutritious articles as the judgment of the prescriber may direct, or the state of the market, or the condition of the larder may afford. Gravy, butter, and sweets; rich well-seasoned soups and jellies; coffee and chocolate. By way of relish, the fruits of the season.

Things have changed since the War of 1812. My own practical experience in hospital dietetics goes back to my student days in 1905. I have seen too many diets introduced and too few discarded.

Why should a clinician and research worker in the field of nutrition be so pessimistic about the wonderful variety of diets that have appeared during this century? Perhaps it can be explained if I review some of the unhappy experiences in what has been on the whole a delightful association with the modern advancements of science. While I was a medical student our course in the feeding of infants was conducted by a distinguished professor of world-wide reputation whose little books guided the upbringing of children throughout this country. He advocated for infants the top of the milk bottle with carefully measured additions of lactose and water so as to secure exact proportions of protein, fat, and carbohydrate. He held up to us as a terrible example of harmful feeding the diets used in the tenement districts where the mothers gave their babies scalded whole milk or evaporated milk and even fed the children fruits and vegetables from the table. It was a great shock to me when a later generation of pediatricians adopted this tenement diet and abandoned the top milk formula with all its mathematics.

In the textbooks of medicine that I studied in 1905 and 1906 the greatest stress was laid upon the danger of giving any solid food to patients with typhoid fever. Osler recommended a diet of three pints of milk, broths, barley gruel, albumin water, or even the whole egg beaten up in milk. He adds, "Inglis has shown that cases do very well on cold water alone." When I was an intern my ears at first were deaf to the plea of the convalescent typhoid patient. Then I saw one poor skeleton of a man crawl out of his bed and steal a tray of food from his sleeping neighbor. I saw one woman eat a bunch of violets that had been placed at her bedside by a kind Christian lady who visited the wards. About 1908 we began giving more and more food to the typhoid patients and by 1910 they were receiving three or four thousand calories a day and were thriving. We ascribed this to the calories. Now I wonder if a considerable part of the improvement was not due to vitamins.

When I was a clinical clerk, Theodore

Janeway made me read in one night von Noorden's book on diabetes so that I could construct for my diabetic patient the generally accepted high protein, high fat, low carbohydrate diet. The only way I could make a palatable diet rich enough in protein and fat was to list a generous amount of Devonshire clotted cream which I remembered fondly from my last visit to England. Janeway told me that he had tried repeatedly to get this in New York but it was unobtainable.

Of course, this rich diabetic diet was swept away in the starvation era of Allen. The starvation diet was beautiful in its simplicity but a very complex situation arose when you were reluctantly forced to feed the patient. Should you begin with protein, fat, or carbohydrate? Should you increase these at the rate of 10 or 5 gm. a day? Controversies raged, but the 10 gm. step was generally accepted. It reminded one of the little boy at the zoo who asked the keeper if it would hurt the elephant if he gave him a currant from his bun.

Next we had the Newburgh diabetic diet high in fat, which really did not cause much increase in the metabolism of fat but merely substituted food fat for body fat. At about the same time came the carefully balanced diets of Shaffer and Woodyatt to secure the exact ratio of glucose to fatty acid which would prevent ketosis. It was all very pretty but most clinicians forgot the simple fact that it was not the ratio of fat and carbohydrate in the food that counted but rather the ratio of carbohydrate and fat actually metabolized in the body. This point of view is of fundamental importance. You can make large changes in the diet without affecting the ratio of materials oxidized. Just think of the substances that are metabolized when a man starves. Low diets merely substitute food for a small portion of the body stores, diminish body losses, but cause no change in the oxidations.

Even more recently since the insulin era we have changed the diabetic diets by adding large amounts of carbohydrate. Again the question arises as to how large a step we can take with each increase of carbohydrate. In our own clinic, like most others, we usually jump the diet 50 gm. carbohydrate each time. Since we are not quite sure whether it is better to give 100 or 300 gm. carbohydrate a day why should we bother with small steps?

I remember in 1911 a diet for nephritis that was aimed to spare all protein metabolism by a protein-free régime. This neglected the fundamental fact that the patient would certainly metabolize 30 to 60 gm. or more of body protein a day and that the protein utilized would not be increased by food protein in amounts smaller than the amount destroyed in the body itself. Now we are giving nephritic patients with large losses of albumin a diet that is high in protein. Perhaps we may return to a lower protein ration.

This is a review of diets that have failed. There is even a longer list of drugs that have failed. Why have these diets and drugs failed? It is simply because our knowledge is imperfect, our judgment fallacious. Doctors as well as other scientists have made errors and will continue to do so. If half of our old diets were unscientific we can be fairly certain that the next generation

will find at least a third of our present diets unscientific. We need not be ashamed of this possibility but only ashamed of our inability to recognize this as a possibility.

We might as well acknowledge the fact that the leaders in scientific medicine have an imperfect knowledge of the science of nutrition and that most medical students, interns and practicing physicians have forgotten a large proportion of what they were taught. This is in part due to the growing importance of the dietitians. Doctors are busy men and when they find that the dietitians know much more about diets than they do themselves they place more and more responsibility on other shoulders. They have done exactly this same thing in regard to nursing and drugs. The dietitians know more about diets than the doctors because they have had a long training in this field and are working in it every day. In our own hospital and medical college our dietitians give a much needed course of instruction to small groups of fourth-year medical students. Dietitians should be the most important factors in educating practitioners in diets.

From time to time dietitians and medical boards of hospitals make serious efforts to cut down the number of special diets. Almost invariably after such a weeding there is a growth of new weeds. Very recently the subject has been well reviewed in an article by Miss Mary Ruth Curfman, "Are Special Diets Overdone?", presented at the Dietetic Section meeting of the American Hospital Association. She sent questionnaires to 93 hospitals and found that in the 43 hospitals that answered the questionnaire 3 to 43 per cent of the patients were on special diets, an average of 21 per cent. The average increase in cost for the special diets was about 25 cents per patient per day over the cost of the routine diets. One hospital reported that to supply the high calorie, high vitamin requirement entirely through food selection increased the cost 27 cents per patient per day over the cost of serving a high calorie diet amplified with vitamin concentrates. About one-half of the dietitians felt that special diets were overdone. Miss Curfman presents the dietitian's point of view. I should like to discuss the question from the doctor's standpoint.

It seems wise in this short paper to limit the discussion to the ward diets that are officially listed by the dietitians as diets that can be ordered by the interns, residents, or attending physicians. This excludes metabolism wards used for research where diets must be prescribed individually and measured accurately. It also excludes a few special cases on the wards where patients are on experimental diets or highly specialized diets because of some rare disease or combination of diseases. It does not take into account the great variety of diets that may be needed for patients who are allergic to certain foods. It does not take into account the variations in diet imposed by religion or individual taste. The discussion is intended to deal only with those diets that are supposed to have a scientific basis.

Diets in disease may be roughly divided into two groups. One group takes into account the limitation of appetite due to serious illness or surgical operation, or the limitations of the gastro-intestinal tract starting with bad teeth and ending with painful hemor-

rhoids. Another group takes into account the metabolism of the patient and is designed to supply substances that are especially needed or substances that are to be avoided. The main point of this group is to alter in some way the metabolism of the patient and therefore minor variations in these diets are of no value unless they actually do make alterations in the metabolism. Thus we see that diets may be ordered for what they do or do not contain, and if ordered for substances that they do not contain we should make sure that the things they do not contain are absent in sufficient amounts to make their non-containing of importance!

What happens in practice? As the science of medicine advances, new diets of real importance come on the horizon. The doctors ask the dietitians to list these new diets. In addition to the diets of real importance there are some of doubtful value that are requested by doctors with special fads or fancies, and the dietitian obligingly lists such régimes. Some doctors, not taking the trouble to study the diets already made official, ask for modifications with changes so slight that they are of no practical significance. Fortunately, the dietitians can ignore such slight changes, but the multiplicity in a hospital dietary confuses dietitians, interns, and those attending physicians who take the trouble to look at the hospital dietary.

How may this situation be corrected? It is handled well in some hospitals where they have committees of doctors and dietitians who go over the lists at frequent intervals. The introduction to the Massachusetts General Hospital Dietary reads: "Members of the staff representing all services have discussed and approved the material contained herein." I find in the diets listed at the Massachusetts General Hospital an asterisk after the heading "Table of Contents". At the bottom of the page is a note—"Diets will be removed when out of date. New diets will be added." In some hospitals, however, including our own, the multiplicity of special diets indicates that no such committee has been removing diets when out of date. I am proposing a more general development of this plan of a committee on dietetics.

When our New York Hospital moved into its new building it was discovered after a few months that there were 75 different kinds of needles stocked in the operating room. The Medical Board was horrified and appointed a committee which reduced the number to 31, to the satisfaction of all concerned and particularly the treasurer of the hospital. A little later we discovered a similar condition in our pharmacy which was stocking an enormous number of drugs, many of them expensive proprietary preparations that could be ordered at will for patients on the wards or in the dispensary. A Formulary Committee representing the various clinical departments, the pharmacy, and the Department of Pharmacology of our Medical College, was formed. Its purpose was to scrutinize every single drug in our printed Formulary. It adopted certain fundamental rules as, for example, "No article will be admitted (except for controlled research) before its therapeutic value has been established"; "No article of secret composition will be admitted"; "No mixture of two or more active substances will be admitted unless evidence is submitted that the mixture presents

therapeutic advantages over the simple substances"; "Heads of clinical departments are to be notified whenever any preparation is considered for elimination from the Formulary in order that they may submit evidence for its retention". Adequate provision was made for drugs that could be supplied in emergencies or used in controlled experiments.

This Formulary Committee found that its task was not an easy one. When a doctor was called before the committee to give evidence that all the sixteen ingredients of his pet prescription were necessary he usually had difficulty in controlling his temper and fell back on the statement that he had been using this prescription for many years and that it worked well. The committee then went over the ingredients one by one and eliminated all but the single active drug. If a new substance that seemed promising were proposed, it would be accepted for controlled research. An example of the work of the Formulary Committee has just come to my desk. Some of the doctors treating patients with peptic ulcer were anxious to have aluminum hydroxide jel (Amphojel) made official in our Formulary list so that it could be obtained routinely. The committee decided that they would withhold their approval until there was a clinical study with adequate controls to ascertain any superiority in action over previously employed regimens or medical treatment. In their recent meeting they decided that "It is apparent that no such control was exercised by those responsible for the evaluation". Apparently it had been impossible in the Out-Patient Department to make a scientific comparison of patients treated with aluminum hydroxide jel and those treated with other medicines. Such studies are difficult in a dispensary. The doctor who was the advocate for the aluminum hydroxide jel admitted this lack of control, brought out certain advantages in the preparation and certain disadvantages, and said that the only way a good evaluation and comparative analysis could be conducted would be on hospitalized, acutely ill patients. The committee decided to request that this study be continued on hospitalized patients for an additional year, and I was requested to arrange for such a study. We shall probably have to treat alternate patients with aluminum hydroxide jel and compare the results with an equal number of similar patients treated with other methods. It also will be necessary to try the effects of different preparations on the same patient. I doubt if an answer can be obtained until at least 50 patients have been treated with each method. Careful observation and scientific analysis will be required. It will also be necessary to present a careful review of the literature.

It has been my experience when asked to prepare a paper like this that the chief educational value accrues to the author rather than to the audience. Two weeks ago, realizing the state of diets in our own hospital, I requested our Medical Board to appoint a Dietary Committee similar to the Formulary Committee but with representatives not only from the clinical departments but also from the Department of Nutrition of the New York Hospital and the Departments of Physiology and Biochemistry of our Cornell University Medical

College. Such a committee was approved.

I am trying to visualize some of the future meetings of this committee. Perhaps the committee is considering the question of caloric standards and has asked the head of one of our clinical departments why the basal requirement is estimated at say 25 calories per kilogram per day. The chairman of the committee might question the value of basing the diet for an adult on the kilograms of body weight. Suppose there were two men on the ward 5′8″ tall, and one of them weighed 100 kg. and the other 50 kg. Should the fat man receive twice as much as the thin man, or vice versa? The answer would be vice versa. Should the protein requirement be based on kilograms of body weight? How closely can we estimate the caloric requirement of a ward patient? How closely the protein requirement? Are there not half a dozen factors more important than the body weight?

This reminds me of the old story of the weighing of the pig. A certain farmer had an unusually large pig and he naturally wanted to know the weight so he could boast about it to his neighbors. There were no scales in the neighborhood large enough to weigh the pig, but the farmer's son Elmer, who had just returned from business college, knew the method. With a good deal of difficulty he pulled the pig on board a flat-bottomed rowboat and carefully marked the level of the water on the sides of the boat. Then he pulled the pig off the rowboat and piled on stones until he had found the equivalent weight. Then Elmer and his father took off the stones one by one and guessed the weight of each. Is not that just about what we do with our estimates of caloric requirements? We guess a dozen different factors and add them together. The basal requirement is one factor, activity another, composition of foods a third, amount consumed a fourth, and so on down the list. Only once in my life have I attempted to do anything with a table on the composition of foods. A long time ago I helped Warren Coleman in the preparation of such a table derived from Atwater and Bryant, and in our abbreviation of the table we emphasized not the average composition of the foods but the enormous percentage variations. In 1933 when I was asked to make suggestions regarding a daily caloric requirement of hospital patients I made a short table based on three different heights and three different grades of activity. Perhaps these nine variations were too many. Can we estimate a man's caloric requirement closer than 500 calories per day or his protein requirements in steps smaller than 20 gm.?

I visualize one of the attending physicians being questioned by the Dietary Committee regarding a high vitamin diet. He would be asked if it would be advisable to increase the high vitamin foods to the point of distorting a regular diet and adding very materially to the expense. Would it not be better to make moderate supplements in the high vitamin foods and then add concentrates of the individual vitamins that were especially required? Another doctor who is advocating a diet high in iron might be asked if he could not obtain better results by sticking to the regular diet and adding the iron in the form of a drug. It is quite possible in our enthusiasm for special diets we are trying to

make them take the place of medicines and are thereby endangering the main purpose of the food.

The chief difficulty will come when some doctor, probably in one of the specialties, tries to defend his own pet diet. Let us say, for example, that Dr. Blank has a special diet for housemaid's knee. He is convinced that such a diet is necessary because he has obtained excellent results clinically. The committee would ask him first if his diet made any significant change from the standard diet in its composition of foods. The committee would then proceed to scrutinize each change and ask the doctor for evidence that the change was sufficient to affect the patient's intestinal tract or his metabolism. He would then be asked if similar results could not be obtained less expensively by using drugs or vitamin concentrates. Finally, if there were still doubt in the minds of the committee members they could say, "Will you please try your special diet on alternate cases of this disease, comparing it with such and such a diet that is already standard in our hospital? Please report the results to the committee after one year with your observations as to the effects of the two régimes given in parallel columns. If the special diet is important enough to justify its inclusion in the list, it is certainly important enough for you to go to the trouble of making this simple experiment."

In a recent paper entitled "Elimination of Worthless Drugs" I remarked, "The man who removes from our therapeutic armamentarium worthless drugs that are commonly used, contributes more than the man who adds a few more drugs employed in rare diseases." The newspapers throughout the country reprinted this in somewhat distorted form. Apparently the newspapers approved but I received many protests from doctors. Nevertheless, the fact remains that the man who removes from our therapy a worthless drug or worthless diet has certainly accomplished some good. The man who adds a new drug stands about one chance in 1000 of adding a drug that is of real value. Worthless drugs and worthless diets are expensive in time and money. They are confusing and, worst of all, they divert our attention from the principles of pharmacology and dietetics that are established on firm bases. If we can eliminate a large number of worthless special diets the time and money that is saved can be employed in making the fewer diets better.

Correcting Nutritional Defects

The correction of nutritional defects requires a well planned system of instruction which must be conducted on an individual basis. The nutritionist should plan and organize this type of instruction, but she will do little individual teaching. The major portion of this work will be assigned to public health nurses, since the public health nurse is the person who is in closest touch with home conditions and is most familiar with the family life of the community.—*Smillie, W. G.: Public Health Administration in the United States, New York: The Macmillan Company, 1940.*

THE PSYCHOLOGICAL ASPECTS OF FEEDING IN EARLY CHILDHOOD[1]

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THERE are a few of our fellow human beings who try to look forward into the future. Some of these have promised us that meal-time will bring us no more than a carefully compounded "scientific tablet", a week's supply of which can be carried in one's pocket. It is said that these food tablets will contain in a highly concentrated form everything needed to sustain life, and some of the prophets have gone so far as to say that the human race will be healthier and perhaps happier because those delightful visual and olfactory sensations which tempt us to eat more than we should will no longer be present. Eating to most human beings, however, is a function which includes more than supplying to our bodies an optimal quantity of fuel to be metabolized.

Ever since those prehistoric days when the evolutionary forebears of modern man began to lose the snout with which they rooted in the ground for food and to develop a prehensile hand with which the food could be taken to the mouth, a great many cultural and social customs and activities have been accumulating which center about the meal table. It has even been said that one of the reasons why the modern generation is going to the "bow-wows" is because the family meal table has given way to the drug-store counter, the delicatessen, and the automat. In our social intercourse the dinner table still plays an indispensable role and the luncheon table is equally as important as the golf course in the transaction of the nation's business. It would be foolish to question the broad role which eating and its associated activities play in our lives.

It was not until within the past fifteen years or so of the modern scientific era of the feeding of young children that we began to concern ourselves not less with *giving* the child adequate amounts of the proper food but more with the child's *taking* of food. In the establishment of the usable principles of the feeding of infants and children there had developed a good deal of rigidity and dogma. Causes of refusals of food and other difficulties were sought in the kind of food given and not in the child or the manner in which the food was presented. The neglect of the child's part in the feeding regimen was no doubt responsible to a major degree for the high incidence of anorexia in private pediatric practice which has been variously estimated at from 50 to 85 per cent. In both the pediatric and psychologic fields, alike, attention began to be paid to those factors in the child himself and in his environment which seemed to be important in the development of what Brenneman called "This truly amazing phenomenon, the majority of the young of any animal, refusing to eat a diet that is not only scientifically optimum, but as appetizing

[1] Read before the Maternal and Infant Health Session, American Dietetic Association, New York, October 21, 1940.

as culinary ingenuity can make it." He believed it could only be explained on a psychologic basis.

We have definitely arrived at what Powers has termed the "Psychologic Era"of infant feeding, when "in applying the facts (concerning nutrition) in the feeding of the infant, his emotional life and that of the mother must be taken into consideration, or else psychologic factors may become so disturbing that good nutrition is not obtained. It is certain, in respect to the future of infant feeding, that the pediatrician must think not less in terms of principles of nutrition, but definitely and decidedly also in terms of the personality of the child and of those in his immediate environment, especially of course, the mother." Many of the older children who are brought to the pediatrician or psychiatrist because of feeding difficulties give a history of poor feeding habits going back to early infancy. The prevention of feeding difficulties in both infancy and older childhood depends upon the development of good feeding hygiene.

The individual who attempts to guide and direct feeding activities is in need of knowledge regarding the child and his development in addition to knowing a great deal of the fundamental biochemical and physiological aspects of nutrition. A rigid, unyielding attitude which does not take into account the individual variations between children as well as fluctuation in needs from time to time in the same child is quite apt to lead to the development of feeding difficulties. I shall discuss some of the more important factors concerning the child which must be taken into account in helping to develop a good feeding hygiene. First, we shall take up those which have to do with changes in appetite and the amount of food taken; and second, those which have to do with the way in which food is taken.

Some children, more placid ones, to be sure, will take in all food that is thrust in their direction and still look for more even though their latitude is almost as great as their longitude. Most children, however, will rebel when the stuffing continues beyond satiety. One looks at the first group and feels that they must be protected from over-feeding. However, if food is not pushed they will eat to the point of their immediate needs and then stop just as does the second group. We do not feel that in the healthy, reasonably happy infant or child there is any reason to doubt that the best index of the amount of food necessary is his own appetite. Clara Davis' well known experiments in self-selected diets with both infants and older children have contributed important evidence in this direction. The infant's nutritional needs over a 24-hour period can be predicted with a fair degree of accuracy, but our ability to prophesy how much he will want at any one feeding is much more limited. Many years ago, Jacobi, the father of American pediatrics, in commenting on percentage feeding remarked, "feeding cannot be regulated by mathematics as well as by brains and by the wants of the individual child." Individualization of feeding is no longer a thing of the future. A sympathetic degree of latitude which takes into account individual variations does not encourage whims and instability in the child. On the contrary, keeping the child directly and completely satisfied helps him to avoid experiencing frustrations and anxieties which result from

undue denials. Lack of respect for the individual variations and fluctuations which occur from day to day, or forcing resulting from a zealous desire to make the child's weight gain conform to some predetermined schedule are the two most common sources of difficulty.

There are some infants who never seem to nurse or eat well and from their earliest days seem to be disinterested in food. In many of these we cannot be sure whether or not an emotional disorder is affecting the appetite. In infants as well as adults the appetite is easily affected by emotional stimuli. The infant who is constantly confronted with a tense, agitated parent or nurse is a poor feeder. In older children excitement or sudden changes in surroundings frequently cause temporary anorexia which, if it is met with alarm and tension, may become permanent. Chronic poor appetite often may arise out of the temporary decrease accompanying a brief physical illness, particularly when the psychological aspects of the illness and convalescence are not well managed.

Appetite is closely correlated with the velocity of growth. In a rapidly growing organism a large proportion of the food ingested goes to provide energy for growth. When growth slows up, the appetite decreases. As one Italian mother put it, "I used to think she no grow because she no eat. Now, I see she no eat because she no grow." Clinically, a slump in the appetite is noted frequently toward the end of the second and in the third year of life. The parent, having gotten quite used to the idea that each month the child eats more and more, suddenly discovers that the heaping bowls of cereal which used to disappear as if by magic are a thing of the past. Instead of the amounts increasing each month they remain static or the child may eat even less than before. He stops gaining weight for a period and the mother's worst fears are confirmed—she has a feeding problem on her hands! Unfortunately, it is also about this time that the baby loses his infantile chubbiness and begins to take on the physical configurations of the older child. The mother's consternation increases—the child is becoming thin as a result of his decreased appetite! To make matters worse, many children about this same time enter into a resistive state when they begin to respond to most demands with "no-no" or "I won't." This is the last straw, the child is a behavior problem as well! Resistance is frequently met with counter-resistance and a true feeding disorder results, as well as a tense situation which may markedly influence the parent-child relationship for some time to come. The reasons behind this slump in the appetite curve are easy to understand. It is at this time that there occurs a flattening off of the growth curve (*see* figure 1). If this is viewed from the standpoint of rate of growth per month the slump is even more dramatic (*see* figure 2). There is a real physiological basis for the anorexia of preschool years. A realization of this helps in anticipating the period and in preventing the development of a real feeding disorder at this time.

One of the important fundamental psychological needs of the child is to be permitted to grow and develop at his own peculiar rate. If he is pushed to do things before he is ready for them or if he is not given a chance to exploit each new capacity as it emerges, we have

failed in our efforts to provide him with an environment which promotes optimal emotional growth and satisfactions. Many of the early developmental factors are closely linked up with feeding behavior.

At birth the infant is a highly incomplete organism whose behavior for the first few weeks is almost entirely reflexive in nature. The most highly organized of these reflexive activities are those which have to do with the obtaining and swallowing of food. The sucking reflex is one of the earliest laid down in prenatal life. Nature takes pains to ensure that the newborn child will be able to feed. In addition, Nature has provided that the earliest purposeful, voluntary movements which the child develops are those of the muscles involved in feeding. The newborn infant also has the capacity to cry when uncomfortable and the most frequent cause of discomfort is the hunger contractions of the empty stomach. When the stomach is filled, the distress is relieved and the infant responds with another of the attributes with which he is born—the ability to react pleasurably to experiences and to his environment. The young infant who satisfies his hunger at breast or bottle, contentedly goes to sleep. If for any reason his hunger is not satisfied he becomes restless and fretful. The lack of satisfaction may be due to a number of different reasons: insufficient supply in the breast or bottle, inability to get the milk from the breast due to inverted nipples, difficulties with a rubber nipple, or deficiencies in sucking ability present in the child himself. A similar type of behavior has been observed in young infants at the breast if the mother approaches the occasion with a hostile or resentful attitude. The infant whose feeding

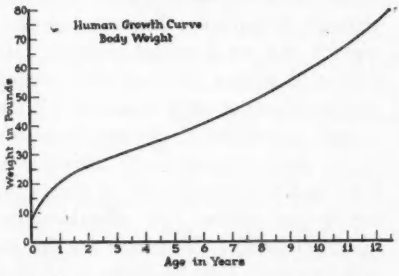

FIG. 1. The smooth curve presented is a theoretical curve of growth in body weight versus age. This curve was obtained by fitting the theoretical equation to the average data of Woodbury, Palmer, and Quételet, both sexes combined, white children. Woodbury's data ranges from birth to 6 years and contains 167,024 measurements of body weight. Palmer's data and Quételet's data range from birth on and are given in averages for each year of life. (Weinbach)

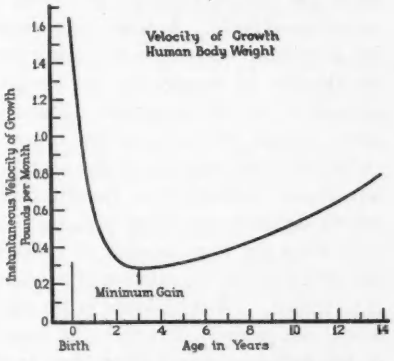

FIG. 2. The smooth curve presented was obtained by taking the derivative of the equation describing the growth in body weight from birth to puberty shown in Figure 1. This gives the instantaneous velocity of growth in pounds per month plotted against age. The minimum rate of growth occurs at about 3 years of life. (Weinbach)

experiences are repeatedly frustrating to him is apt, in addition to showing a poor nutritional status, to be a fretful, restless and unhappy baby.

During this early feeding period when the food is taken in through sucking there is some evidence to show that the sucking experience itself is of importance in the general psychic economy of the child. In the presence of unsatisfying feeding experiences arising out of any cause, the child will begin to suck fingers or various objects. As soon as the feeding experience becomes a satisfying one emotionally or physically, the marked extraneous sucking disappears. One observes babies fed more or less concentrated formulas begin to indulge in extra-nutritional sucking even though their caloric demands are being met, only to stop when the total amount of sucking needed to obtain the same caloric intake is increased. Older children in the preschool age period often seek the solace of the thumb or finger when they have difficulties in coping with the life-situation in which they find themselves. There certainly are wide variations in the sucking needs of different infants and no quantitative rule of thumb can be given. One can say with certainty that there is a pleasurable aspect to feeding aside from the immediate assuagement of hunger pains.

Feeding is one of the earliest pleasant sensations and experiences of the infant and is certainly the one most frequently repeated. In addition to the direct satisfaction of hunger, the child derives pleasure and satisfaction from another aspect of the feeding routine. It is through the oft-repeated act of feeding that the infant receives a large share of the cuddling and mothering which are so necessary to normal emotional development and are important factors in the development of healthful, happy, mother-child relationships. This close physical contact between mother and child is inevitable with breast feeding and unless unusual attitudes are present in the mother, the emotional reaction in the child is a satisfying one. The progress in knowledge of nutrition has made it possible to substitute artificial feedings which are satisfactory from the purely physical viewpoint. Powers, however, regards this as a mixed blessing. He states: "I believe that maternal nursing may have just as great importance in the normal unfolding of the emotional life of the child as human milk itself had in the physical development of the baby, twenty-five years ago. Furthermore, maternal nursing, or at least the earnest desire to fulfil that function, is of vital importance in developing the normal emotional relationship between mother and child." Certainly, bottle feeding from this point of view will not be too satisfactory to the infant if the mother or nurse takes the opportunity to free herself from the physical handling of the child and the infant is given the bottle while in the crib. The usual procedure in this case is for the busy mother to prop the bottle on a pillow or to use one of the gadgets designed for this purpose. It is of interest in this regard to recall the experience in one large newborn nursery where it was found through trial and error that the bottle-fed babies did better when they were held in the arms of the nurses and not merely laid on their laps. In addition to the closer physical contact usually experienced by the breast-fed baby, there is another factor which makes bottle feeding less

satisfactory than breast feeding to the infant. Bottle babies are apt to be more strictly limited at meal-times as to quantity. They are expected not only to be satisfied with the amount in the bottle but to finish up the amount if they seem inclined to stop feeding before the bottle is emptied, even if this means waking them up frequently, or repeatedly trying to stimulate sucking by moving the nipple in their mouths.

The transition from breast to bottle, if made suddenly, is apt to be a difficult time for the baby. Children in a slightly older age period are upset if one changes so much as a word in a nursery tale and they love endless repetition. Infants also express their resentment of changes. Weaning from breast to bottle is not necessarily a traumatic experience and certainly can be made less distasteful to the child if it is not taken as a signal to stop holding the child while feeding. In addition, if a bottle is used when the child first begins to drink water and perhaps for one or two feedings a week the infant seems to be only too willing to leave a failing breast supply.

As the infant grows older the movements of the muscles of the lips, cheeks, tongue, jaw and nasopharynx become more efficiently coordinated. He is able to suck and swallow in a more efficient manner. There is less spilling from the corners of the mouth and he no longer chokes and coughs while feeding. He becomes interested in the face of the mother while feeding and slightly later becomes interested in the bottle or breast, purposefully seeking it out and drawing it to his mouth. At first he quickly relinquishes his hold but in the latter part of the first year is frequently able to bring the bottle to his mouth and manage it himself.

The infant, however, must finally be adjusted to the cup as the accepted utensil for the older child. The very young infant is able to take fluid from a cup if the mother is skilful enough in manipulating it. This is accomplished through sucking movements and it is not until toward the end of the first year that the pattern becomes a true drinking process. His manual motor coordination progresses to the point where he can manage the cup entirely by himself. This does not take place until two or three months after the first birthday. Along about this time the infant may want to take complete charge of the drinking and resent interference from the mother or nurse.

Weaning has been discussed at length in psychoanalytical literature. The deprivational, emotional aspects have been stressed. Weaning is not necessarily a traumatic experience for the child. As mentioned previously, weaning from breast to bottle is relatively easy when the breast is drying. Some infants spontaneously wean themselves to the cup toward the end of the first year. Others still seem to want the bottle well on in the second year. In these there sometimes seems to be an undue emotional fixation on the bottle which is intensified with sudden dramatic removals. Other infants seem to require a larger amount of suckling activities. There is no hard and fast rule about the proper time for the child to be weaned to the cup. In general, the tendency is to wean to the cup when the motor feeding abilities are sufficiently mature. Even after this many children who take most of their fluids from the cup demand

a bottle at bedtime. In some this activity seems to have the same significance as other bedtime rituals which are harmless enough unless there is some neurotic utilization. One such boy of our acquaintance still had a bottle at bedtime at 13 years. In older children weaning sometimes takes on a degree of social significance which obscures the intrinsic factors of satisfaction in the child. Harsh, forcible methods have no place in effecting feeding transitions. They are particularly apt to produce weaning problems. Transitions should be slow, gradual processes. Children who are allowed to become acquainted with the cup before they are expected to use it exclusively, rarely show difficulties. Gesell and Ilg point out that although weaning has come to mean sharp detachment and alienation, its basic etymologic meaning is *accustom*. This is the secret to healthful, happy transitions.

When solids are introduced the child may rebel at the change and if the rebellion, causing tension and anxiety in the parent, is met by aggression the baby responds with refusal of food, vomiting, or other symptoms. This is particularly apt to occur if the parent has followed a rigid régime of carefully measured feedings and believes that the baby "has to have" whatever is advised or she has done him irreparable harm. If solids are introduced early it is well to remember that in the young infant there is a reflexive protrusion of the tongue which tends to push out solid materials introduced into the mouth. This is primarily a protective mechanism to prevent the baby from attempting to swallow solid foods before his neuromotor development is ready for this function. Swallowing of a solid bolus depends on the physiological readiness of the infant for such activities. Gravity assists in the swallowing of fluids but the swallowing of solids is dependent upon nicely coordinated muscular contractions and relaxations and in addition also seems to involve a learning process. Gesell points out that although some infants are neuromuscularly ready to swallow at twelve weeks of age, it is best to defer until sixteen weeks or later. If the child is not ready for solid foods, the reflex pushing out is often wrongly interpreted as refusal and the feeding is forced. The evening meal is usually the best time to introduce the new food as then the child seems to be more experimentally-minded.

In order to handle the usual types of food, as the child grows older he must learn to chew. Again, a sufficient degree of development must be present before any learning can take place. The infant is born with a poorly developed lower jaw which is a decided advantage in sucking but which does not help very much in chewing activities. Some children who during the second and third years do not chew well, show a persistence of the highly underdeveloped mandible. This may be a defect in growth, although in some it seems to be related to a lack of use as these children usually show a desire to prolong the sucking method of taking food. In the newborn the mouth is apt to be dry as a result of imperfect salivary secretion, and the secretion is quite necessary for adequate mastication. Biting is usually intensified during teething but is not dependent upon teething for its appearance. Usually by the end of the tenth month mastication becomes a fairly well-defined

pattern. In the early part of the second year it is quite marked and some children will want their food in chunks. It would seem that the best time to begin giving food to chew on is when the child is exploiting his new-found capacity. If it is delayed too long after this, through a fear that he is not able to handle it, he may well want to continue on pap and purée even to school age. Children vary considerably in their preferences as to consistency and temperature of food. Many are quite fond of raw vegetables from an early age. No great harm can result from humoring these whims, particularly if new foods of different consistencies are introduced from time to time.

From the physical standpoint the child has arrived at a degree of maturity in feeding behavior when he is able to feed himself with more or less dexterity. He should not be introduced to the book of etiquette until he is able to take care of the mechanical aspects of eating without smearing or spilling. This depends upon the full development of various complicated motor functions. The handling of the cup has been referred to above. The successful conveying of food to the mouth is not an ability which arrives overnight. It is the result of gradual, slowly evolving coordinations and adaptations of motor movements involving the arms, hands, fingers, trunk, head, mouth and eyes. Before the child begins to use the spoon at all successfully he is able to pick up almost microscopic-sized morsels of food from the tray with his thumb and forefingers. This pincer-like use of the fingers does not arrive until the end of the first year. Then follows an increasing ability to get the spoon in the mouth without getting the food on the face or dumping it out on the way. Finally, the child is able to fill the bowl of the spoon without the use of the fingers and neatly and dextrously convey it to his mouth. This ability does not as a rule manifest itself much before the end of the second year. Along with the maturing neuromotor coordinations the child needs much practice. If an over-zealous parent places undue pressures on the child in the line of developing techniques or table manners when the motor patterns are immature, emotional factors may complicate the feeding situation. Many difficulties may arise during the latter half of the second year because of too much interference with the child's self-feeding. On the other hand, difficulties are frequently seen during the third year because too much is expected of the child. One must not forget that in the second or even third year the hand preference may not be well marked and the child may eat with either hand. Some parents are especially prone to interfere in this area.

Because of the very deep and basic significance of feeding to the physical and emotional welfare and development of the child, those who guide his feeding are in a peculiarly favorable position to give him a good start in life. If the type of feeding and the manner of presenting it are adapted to the individual needs and characteristics of the child, many emotional conflicts can be avoided. With a knowledge of the maturational factors, a sympathetic handling develops which modifies the demands made on the child by taking into account his readiness for the various steps which lead to the more mature goal of independent self-feeding.

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Vitamin E

It is clear, therefore, that our present knowledge of vitamin E is woefully incomplete. We know nothing of the human requirements or chemical methods of estimation, and little about its biologic function. Many of the animal experiments and nearly all of the clinical studies are poorly controlled, uncritical and have not yielded the definite, clearcut information which we possess for many other nutritional factors. That it has an important biologic role appears an almost inescapable conclusion. The widespread changes in the endocrine, nervous and muscular systems resulting from its deficiency would lead one to believe that many interesting functional relationships will be brought to light as the place of this vitamin in animal physiology is elucidated.—*Gordon, E. S. and Sevringhaus, E. L., Vitamin Therapy in General Practice, Chicago: The Year Book Publishers, Inc., 1940.*

NAVAJO FOODS AND THEIR PREPARATION[1]

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BETWEEN 1934 and 1936 a study was made of the food habits of the Navajo Indians of New Mexico and Arizona. The portion of the study dealing with the analysis of the foods, including fat, nitrogen and water content and energy values, has been completed in conjunction with Dr. T. M. Carpenter of the Nutrition Laboratory of the Carnegie Institution of Washington[2]. That concerned with the manner in which the foods are prepared and preserved forms the basis for the present paper and will serve chiefly as a supplement to the preceding paper on food analysis.

The information was obtained, for the most part, at first hand from the Indians on the Navajo reservation. The questions were relayed by an Indian interpreter and the answers were later checked from the literature or by persons intimately acquainted with the customs and habits of the Navajos[3]. The Smithsonian system of spelling Navajo words was adopted for use in this paper. The spelling was checked by Mr. Francis H. Elmore of Albuquerque, New Mexico, a student and colleague of Dr. John P. Harrington. Dr. E. F. Castetter of the University of New Mexico checked the scientific names of the plants listed in this study. To Mr. Elmore and Professor Castetter the authors gratefully express their thanks.

CORN AND CORN FLOUR

The Navajo word for corn[4] is *na·tą́·'*. That which is steamed in the earth is called *łe·ci·pē·j*, a word which in Navajo signifies that the corn has been baked or cooked in steam in the earth. After the first frosts, the Navajos select all the immature ears to use in making *łe·ci·pē·j*. This consists of corn hardly ripe enough to be dried and stored and some so green that the kernels are not fully formed. All such ears, while still in their husks, are placed in a cistern-like pit which has been thoroughly preheated. The corn ears are covered with corn stalks and sand and allowed to bake or steam for at least 12 hours. In this steamed stage the corn is called *łe·ci·pē·j* and can be eaten directly off the cob. The more matured corn thus steamed is selected for drying and may be cut off the cob or allowed to remain on the cob, either husked or unhusked, and stored for future use. In this dried state the corn will keep for several months. When

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[2] Carpenter, Thorne M., and Steggerda, Morris: 1939.

[3] Thanks are especially extended to Mr. and Mrs. Alexander Black of Fort Defiance, Arizona, for their thorough and conscientious checking of field notes and recipes and for their critical reading of the manuscript. The authors are also indebted to the late Mr. Wallace Peshlakai who assisted in collecting the Navajo foods and to Miss Stella Young, head of the Home Economics Department, Wingate Vocational High School, Fort Wingate, New Mexico, for several samples of seeds and fruits used by the Navajos as food.

[4] Throughout this paper the term corn refers to *Zea mays* L.

this dried corn is removed from the cob, it is called *nectjiji*. When prepared for food it is boiled either with or without meat. If ground into flour it is called *ts'a·łpâih*. This flour is eaten dry or mixed with water, milk, or coffee, and drunk. Sometimes sugar is added to the flour. The Navajos also prepare roasted corn by husking the green ears and roasting them over hot coals. When thoroughly roasted, the kernels are eaten off the cob. Often such ears are shelled, after which the kernels may be called *yi·ljo·*, a term applied to all dried, shelled corn.

The kernels of ripe, dry corn are sometimes boiled whole, with or without meat, until the husk of the grain breaks and the white kernel swells and becomes tender. This is called *xant·kaih*, which term is applied also to the canned "lye" hominy of the stores. Usually, however, the *yi·ljo·* is ground into a flour.

Parched corn or na·tą́·'sił'êh. The Navajos place dry corn in a pan, parch it and grind it into a flour called *ne'êctjįjii*. It is used by those who travel, being stirred into hot water to make a mush called *tzopi·hi·nil*. The kernels of parched corn and shelled piñon nuts, mixed with salt, are often eaten by the Navajos.

Corn flour or *akha·n* is Navajo Indian corn that is ground either through a hand grist-mill or, more often, on a concave stone slab called a *metate*, and then sifted.

BREADS, DUMPLINGS AND MUSH

Fried bread, commonly used by the Navajos, is made in the proportion of two cups whole wheat flour, when available, one cup commercial white flour, one teaspoon salt, one teaspoon baking powder, and water or milk sufficient to make a hard, stiff dough. When thoroughly kneaded, the dough is fried for a short time in deep, boiling fat. The breads are generally made with a hole in the center to facilitate turning them over while they are frying. The bread is called *ta'tini·lyâ·j*, which means "rise up", referring perhaps to the dough swelling like a doughnut fried in deep fat. Another explanation is that it refers to the bubbling of the boiling fat. Three of these cakes weigh approximately 285 gm. when fresh, and this amount forms the bread part of a laboring Navajo's diet for one meal. More generally, however, *nane·skha·tł̆* (described next) is used by laborers.

Baked bread is somewhat similar to fried bread except that it is not fried in fat. When corn flour is used, the bread is spoken of as *na·tą́·' nane·skha·tł̆*, the first word meaning "corn" and the second "slapped" or "flattened". The bread made from wheat flour is spoken of merely as *nane·skha·tł̆*. Corn flour (if wheat flour is used, baking powder is added) is made into a fairly stiff dough with water and salt. The dough is slapped into cakes 15 to 20 cm. in diameter and about 12 mm. thick, which are baked over hot coals on a griddle, metal plate or flat stone. A slightly different recipe for this bread calls for blue corn flour and juniper ashes to which sufficient water is added to make a stiff dough. This is baked on a hot stone or iron plate and then dipped into salt water.

Navajo yeast bread or *pa·'* consists of two parts whole wheat flour, when available, one part commercial (wheat) white flour, one yeast cake (Yeast Foam), two tablespoons salt, and fat

(generally mutton). For one yeast cake, six quarts flour are used; and for every six cups flour, one-half cup fat. As nearly as could be ascertained, this bread is made similar to our ordinary white bread, except that the Navajos bake it in a Spanish oven or over hot coals. In the latter case, the bread is laid on ashes over coals and then covered with ashes and a few coals. A bread made similarly but without the shortening is referred to as *pa·'ya·j* or "little bread" (biscuits or rolls).

Green corn tamale bread is made from ground green corn, which with added salt, is kneaded into a paste, wrapped in corn husks, and baked in the ground or a Spanish oven. The Navajo name for this bread, *ntshitikǒi·* means "kneel down bread" or, according to the Franciscan Fathers (1910), "which bend their tips". The term, "kneel", probably refers to the ends of the corn husks which are tucked or folded back as the legs in kneeling. This bread is eaten fresh, either hot or cold and with or without butter or syrup. It is also sliced or broken up and dried (*titloki· piska·n*) and later is reboiled in goat's milk or water. The name *titloki·* probably indicates the plopping sound when the green corn is being ground on the metate.

Ash corn bread. Na·tą·' łe·są·, the Navajo term for this bread, means "corn ash-cake." The bread is prepared by grinding any kind of corn, generally blue corn, and adding to it juniper ashes and water. The dough is shaped into loaves about 15 cm. long and 8 cm. wide and thick. These are laid on the hot ground, covered thoroughly with hot ashes, dirt, or sand, and allowed to bake slowly. When baked, the bread is washed with salt water to moisten it, free it of dirt or sand, and flavor it.

Milk corn cakes, apê' ne·zmasť·h, are prepared by grinding any corn in the usual way and adding salt and goat's milk to make a soft batter. Sometimes the milk is diluted with water. The mixture is then baked on hot stones or hot pieces of sheet iron. The batter, after considerable bubbling, assumes a round shape. Either of these phenomena may explain the Navajo term *ne·zmasť·h*. When made with water alone the cakes are called *ne·zmasť·h*.

Poured bread. The Navajo name for this bread is *nanoyę·jťih*, which means "poured" or "spread". It has also been called "hurry up bread", "quick bread", and "war bread". The method of preparation is to grind any corn, add water and, if available, juniper ashes. The mixture is stirred well into a thin batter, poured on the hearth, covered with hot ashes, and baked for an hour or less. Sometimes it is poured into a hole made in hot ashes. It is not used so much now as formerly, when the Navajos were more warlike. The Franciscan Fathers call this a ceremonial bread, spelled *nanoyezhi*. For common use, it is not made in a round shape, a form reserved for the ceremonial bread which is not eaten.

Sprouted corn bread is called *łe·yiljoj*, meaning "side by side under the ground" or "lined up in the ground". The bread is prepared from ground mature corn, to which is added ground sprouted wheat and water. This is mixed well and wrapped in corn husks, which are securely tied. The dough is allowed to stand for a time until the enzyme in the germinated wheat converts the starch in the corn flour into sugars. Recently,

raisins are sometimes added to this dough. The breads, wrapped in the corn husks, are baked in a heated pit. Another bread, called *alkhą·t*, is made like *le·yiljoj* except that the batter is somewhat thinner and is not wrapped in individual corn husks but is poured onto a layer of corn husks which line the heated pit, and then covered with more corn husks, hot ashes and coals; it is then baked, usually all night. This cake is generally 12 to 20 cm. in diameter and approximately 10 cm. thick. The term *alkhą·t* may refer to the sweetened condition or the soft texture of the bread. Another dish called *txanahni·l* is prepared of the same batter as *alkhą·t*, but the batter, after standing some time, is boiled instead of baked.

Green-corn bread is called *titloki·piskǫh*, translated as "dried mush bread". Corn is ground in its milk stage, sugar is added, and the two are worked into a stiff dough which is baked for 30 minutes. The bread is sliced and allowed to dry, in which condition it can be kept for several months. When ready to be used, it is broken and boiled in goat's milk.

Paper bread. A thin batter is made by pouring boiling water over corn flour. When this is sufficiently cooled, it is thickened somewhat with more corn flour. A handful of this thin batter is rapidly spread over a large, smooth flat stone, which is so hot that the batter cooks almost instantly. Then the thin bread is lifted off the stone, doubled and redoubled, again and again. It can be eaten as soon as it is baked or can be kept for a considerable time. It is called *tshē'st'eih*, which means "baked on a stone". The Navajos sometimes mix this bread with soup. Another form of paper bread is somewhat thicker and not folded. A portion of batter is placed on the stone griddle used for baking *tshē'st'eih*, then pushed along with the tips of the fingers to give it an elongated shape. The marks on the cake left by the tips of the fingers give it the name *no·kazi*.

Boiled blue corn dumplings are prepared from ground blue corn and a small amount of juniper ashes, with sufficient water to make a stiff dough. The dough is formed into small, round dumplings 2 to 5 cm. in diameter, which are boiled in water for about 20 minutes. The Navajo word for this food is *k'tne·cptji·h*, meaning "twisted off one by one", or it may refer to the grouping of the dumplings while cooking. Those made of wheat flour may be boiled with meat. When made of corn flour, they are simply boiled in water.

Corn mush or *txani·l* is made from corn flour and unsalted water. A small amount of juniper ashes may be added to take the place of salt as well as to intensify the color of the blue corn. Mush made with boiled milk instead of water is called *apē'txani·l*. The mush, when frozen, is called *ta'yistxin* and is eaten like a sherbet, generally for breakfast. This word is derived from *tah* (up or upon something, as a shelf—in this case, the roof of the hogan) and *yistxin* (frozen). The mush is put on the top of the hogan to keep it from the dogs. Still another mush, *txanacki·j*, is prepared by placing flour from parched corn on the top of boiling water. It is not stirred, the kettle is covered, and the contents are allowed to cook for 20 minutes in the steam. The kettle is then taken off the fire and the flour, which has been thoroughly steamed

above the boiling water, is mixed into the liquid. Still another mush, called *txoctchi·n*, is made into a thin gruel and given to babies, the sick and invalids.

VEGETABLES

Dried pumpkin (*Cucurbita* sp. Probably *C. moschata*) or *na·yízh*, when cut into strips and dried, is called *na·yízhnane·stáz*. The dried pumpkin is boiled and eaten with sugar as a sauce. Sometimes it is made into a preserve by adding larger amounts of sugar and boiling it down. Dried pumpkin is an example of the Navajo method of preserving foods, for when in this form the pumpkin can be kept for years.

Beans (*Phaseolus vulgaris* L.) or *na·'oli* now form a large part of the vegetable diet of the Navajo, are usually prepared by boiling and generally used in stews.

Wild potatoes (*Solanum jamesii* Torr.) or *nâmasi·h* have an unpleasant astringent effect on the mouth and are mixed with a native white clay, which contains a small amount of phosphate, to counteract their undesirable qualities. The potatoes are called gopher potatoes, or *tle·c* (meaning "clay"). The clay and potatoes together are eaten like a mush and are called *na·zisi·'pinâmasi·h*. *Na·zisi* means "gopher".

Wild or Navajo onion (*Allium dessertícola* (Jones) Wooton & Standl.) is called *tl'ohtchin* and also *tinépitl'ohtchin*. The Navajos dig the bulbs in the early spring and eat the entire plant, either raw or cooked with meat. According to Castetter (1935), "they rub the bulbs in hot ashes to singe as well as remove some of the strong taste from them."

Cogswellia orientalis (Conet and Rose) Jones. The roots of the plant are eaten in early spring before the foliage has grown much. They are rubbed in hot ashes to help remove the strong taste and are eaten raw or after being baked in hot ashes.

Chile peppers or *'aze.,titic'i·h* (bitter or pungent medicine). Only occasionally do the Navajos use the chile pepper (*Capsicum annum* L.) as a food, though it seems to be coming more into use.

Wild celery (*Cymopterus fendleri* A. Gray) or *chimajá* is used as a seasoning and is called *xaza'ale·h*, meaning "appetizer". This is a low growing herb with a flavor much like celery and is found commonly on the mesas under sagebrush. The leaves are picked in the early spring, rubbed through hot ashes to remove the strong taste, and are then eaten fresh or are dried for winter. If dried, they are soaked before being cooked and are cooked either with or without wild onions. A small pinch is put into corn meal when mush or gruel is made. It may also be added to boiling meat.

FRUITS, NUTS AND BERRIES

Dried Yucca. The yucca or *ẍack'â·n* is the seed pod of a liliaceous plant (*Yucca baccata* Torr.) known as the soapweed. The fruit pods are gathered when mature, the seeds are scraped out, and the fruit allowed to dry. In the winter the sweet fruit is boiled in water, with or without sugar, and eaten as a dessert. The ripe fruit, with the seeds removed, is also boiled down like a jam, made into cylindrical rolls, and dried for winter use. When to be used, a sufficient quantity is cut off the roll, soaked in hot water until it has the consistency of jam, and eaten with corn mush. This dried yucca preserve is called *ne·sto·k*.

Prickly pears. Prickly pears or *xwoc* belong to the genus *Opuntia.* After the thorns are rubbed off, the fruit is dried. The prickly pears are boiled and eaten plain, boiled with dried peaches, or boiled, the juice squeezed out, and a syrup made of the juice by adding sugar.

Dried muskmelon or *tā'ne·sk'ánih.* The muskmelon (*Cucumis melo* L.) is cut in strips like the pumpkin. These strips are wound upon sticks in the form of a rope, dried in the sun, and can be kept for months. The dried fruit is boiled, sugar added, and it is eaten as we do apple sauce.

Dried watermelon or *t'ê·htji·yán.* The red part of the watermelon (*Citrullus vulgaris* Schrad.) is cut in pieces and dried in the same manner as the muskmelon and the pumpkin. It is not commonly used in this form, however, as the melons can be kept fresh for several months by placing them in an underground pit.

Pinon nut butter or *'atlhic* is made from ground, roasted piñon nuts (*ne·ctc'i·'*) gathered from the native tree *Pinus edulis* Engelm. After the nuts are lightly roasted in a frying pan, they are gently cracked and shelled on a metate, the shells blown away, and the nut meats ground fine. It is used with various breads in the form of a butter.

Acorns, xa'altshēti·h, the fruit from the oak tree, *Quercus utahensis* (A.D.C.) Tydb., growing in timber regions on the mountains, are seldom used for food.

Red squaw berries or *tchi·ltchin* (*Rhus trilobata* Nutt.), translated literally as "odorous plant," are made into cakes similar to choke cherry cakes. The berries are ground, mixed with flour and sugar, and made into a mush. They are also boiled with meat. As a beverage, they are ground, washed, and mixed with water.

Wolf berries or *tomatillo* are the fruit of a thorny shrub (*Lycium pallidum* Miers) fairly abundant along arroyos and on mesas. The red berries, if eaten fresh, are mashed between stones, and powdered clay is added to counteract their astringent quality. If to be preserved for winter use, they are soaked, boiled until tender, and ground with clay.

Choke cherry cakes or *titzénane·skha·tl,* meaning "choke cherry flattened out," is made from *titzēh,* the fruit from the *Prunus melanocarpa* Rydb. The cherries are picked, ground raw, including the seeds, patted into a cake, and dried in the sun. This preparation is mostly for medicinal purposes and not often for food.

Ground cherries are the fruit of a bushy plant (*Physalis neomexicana* Rydb.) found most frequently in cultivated land. The yellow cherries, which ripen in the fall, are shelled from the pod and eaten raw.

Silver nightshade berries, either fresh or dried, are added to goat's milk to make it curdle for cheese. They are the fruit of troublesome, deep-rooted plants (*Solanum elaeagnifolium* Carr.) growing abundantly in New Mexico and Arizona.

SEEDS OF GRASSES AND WEEDS

The seeds of several kinds of grasses were once used for food, but very few of these seeds are utilized now. In times of great scarcity, any seeds that can serve as food were doubtless so used.

Dried seed is a pigweed seed from the plant, *Amaranthus retroflexus* L. Its

Navajo name is *tl'ôhte·sk'itth*. It is ground and boiled into a gruel, after which corn flour is added. It is also mixed with corn flour and made into bread. Occasionally it is made into dumplings. The seed bread and mush are not used much and only by the older people. *Tl'ohte·ih* seems to have been the generic term for a number of uncultivated plants whose seeds could be used for food. *Tl'ôhte·ih* applies to all Chenopods and Amaranths, but specifically to *C. fremontii*.

Weed seed or *'ostshe'* comes from the hedge mustard (*Sismybrium officinale leiocarpum* D.C.). These seeds were ground and eaten as a mush or gruel by the Navajos of olden days but now are rarely eaten in this form.

Sunflower seeds are obtained from the *Helianthus annus* L., a prolific weed on the mesas. In times of great scarcity the seeds are ground and made into bread, dumplings or gruel.

Sage seed is a fruit of the *Artemisia wrightii* A. Gray, a plant that grows on the deserts and mesas but is not common. These are mixed, ground, and made into bread, dumplings or gruel.

Indian rice grass or millet. This plant, *Oryzopsis hymenioides* (Roem. and Schult.) Ricker, grows commonly on mesas. The ground seeds are made into bread, dumplings or gruel. Before the seeds are ground, the cottonlike chaff covering them is removed by holding a bunch of the grass near the fire. As the dry grass scorches, the seeds fall into a pan placed underneath.

Tansy mustard (*Sophia halictorum* Cochrll.) grows abundantly in the spring along the roadsides. Parched tansy mustard seeds are ground and made into a gruel in which bread is dipped.

Narrow leaf grass (*Sporobolus contractus* Hitchc.) is the most used native weed today. The seeds are made into bread in the same manner as is the Rocky Mountain bee plant.

Rocky Mountain bee plant (*Cleome serrulata* Pursh) is called *wa·'* in Navajo. The old plants have a strong odor and flavor, but the young shoots are fairly mild. The latter are gathered in June, and eaten as greens. They are boiled and the water is pressed out three separate times. Then they are rolled into small balls and eaten fresh with or without mutton, or dried for winter use.

A few other uncultivated native plants are used as sources of food by the Navajos and have been reported by Castetter (1935).

MEATS

Since the coming of the Spaniards, mutton or goat meat has been the chief source of food for the Navajos. They call goat meat "chevron." On some small sections of the reservation beef supplants mutton, but this is not generally true. In contrast to the habits of the white man, the Navajo consumes all parts of the sheep or goat, including most of the alimentary canal. The male reproductive organs, the brain, the soft parts of the hoofs, the ligaments of the legs, occasionally the skin after the hair has been removed, the blood and the eyes are all used. The only parts not eaten are the contents of the digestive tract, the bladder, the gall sack, the bones, the horns, and the hair. Navajos have a taboo against eating the tip of the heart and the third lobe of the liver (Young, 1934). Perhaps because the Navajo does consume practically all parts of the animals, he may

have reached a dietary balance, which perfects him for life in his surroundings and which gives him a nutritional reserve resulting in his excellent physique as well as his excellent teeth. (Steggerda and Hill, 1936.)

Mutton is boiled, roasted or broiled. When broiled over live coals, the meat is called *tshi·t pahha· sit'e·ko*, "cooked on the coals." Salt is added just before the meat is eaten.

Large intestine. The contents of the intestine are removed, and the intestine carefully washed. After being cooked, it is thoroughly dried in the sun. It is often stored for use in the winter and for times when fresh meat is not generally available.

Stomach of goat. This is prepared similarly to the large intestine.

Skin of sheep. The hair is pulled or singed off the skin, and the latter is then broiled over hot coals and eaten as meat.

Blood wurst. This is a mixture of corn flour and goat's blood, packed into intestinal cases or stomach linings, like our wursts, and boiled. The blood of goats and sheep is generally saved by the Navajo, and several dishes are prepared from it.

Goat's and sheep's feet are semi-boiled, dried and hung up for future use. When wanted for a meal, they are reboiled, after which every soft part is eaten. The feet of goats or sheep are boiled with corn to make a stew.

In general the average Navajo family of 6 or 7 people consumes one goat a week in addition to such fruits and vegetables as they may have. In fact, the Navajo would probably make meat 60 to 80 per cent of his diet if it were available, which is in sharp contrast to the Maya Indians of Yucatan whose diet is 80 per cent carbohydrate (maize). (Benedict and Steggerda, 1936.) Besides mutton the Navajos consume rabbits (*kah*), the cottontail and jack rabbit (*kahtshoh*), and prairie dogs (*tlǫ·'*). Deer (*pi·h*) and antelope (*tjátt'*) were once a source of food but now there are no deer on the Navajo reservation and the antelope are protected by law.

The Navajos appear to be adopting gradually the food habits of the white man, for they commonly buy yeast and Yeast Foam, commercial wheat flour and bacon at the trading posts.

SUMMARY

The most common articles of food in the daily diet of the Navajo Indians of New Mexico and Arizona are considered. Unlike the diet of the Maya of Yucatan, which is 80 per cent maize, that of the Navajo consists chiefly of mutton (sheep and goat) and practically all parts of the animal, including the skin and alimentary canal, are eaten. The Navajo methods of drying corn and making it into flour, bread, dumplings and mush, their preparation and preservation of fruits, vegetables and meat, and their use of nuts, berries, seeds and seed plants are described. Navajo names for the items of food and for their preparation accompany each description.

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Nutrition

THE MOST IMPORTANT PUBLIC HEALTH PROBLEM

I HAVE BELIEVED for many years that nutrition is the most important public health problem, not only in the prevention of pellagra, but also in protecting the public from many diseases, of which impaired nutrition is a direct, or predisposing cause. I would not be understood as saying that all the diseases of adult life result from malnutrition, but I am convinced that the physical basis for much of the inefficiency, as well as of the actual illness and death from diseases of adult life, come from either poorly nourished bodies or from overeating. It should be drilled into the minds of laymen that the properly nourished individual rarely develops tuberculosis, pellagra and other similar diseases. The well nourished man, woman or child is also less susceptible to the acute infections like influenza, pneumonia and typhoid fever. When all the people of the United States understand the known facts regarding diet and nutrition and live accordingly, many of the present public health problems will be solved.

Twenty-five years, or more, may be added to the average life of the coming generation if parents will spend a few hours in learning, and in teaching their children, a few simple facts regarding diet and nutrition. Not only that, if the adults of the present generation will put into practice the knowledge of food values and vitamins that is available to them, they can greatly increase their efficiency and at the same time add years to their lives.

When one understands something of the facts regarding vitamins and food values, it requires no imagination to see that the widespread use by the American people of foods deficient in the various chemical and nutrient properties, is leading to serious consequences.

Rickets, infantile scurvy, and digestive and nervous diseases are surely increasing among infants, and strong, virile adults do not develop from defective children. The diet of white flour and white meal, polished rice, potatoes and sweets that is used by the great majority of Americans is deficient in many ways; and if the next generation is to be an improvement physically and mentally over the average men and women of today it is important to add to our dietaries more milk, more raw fruits and vegetables and more leafy green vegetables. In other words, the greatest public health problem of today is to educate the public regarding the need of a cow, a garden and an orchard for every country home, with enough dairies, truck and fruit farms to supply the city dwellers with the milk, fruit and vegetables necessary to keep them healthy and efficient.—*Harris, S., Clinical Pellagra, St. Louis, The C. V. Mosby Company, 1941.*

HOW THE AMERICAN SOLDIER IS FED[1]

LIEUTENANT COLONEL PAUL P. LOGAN

Chief of the Subsistence Branch, Office of the Quartermaster General

NOW that we are in the early stages of an extensive program for the military training of our man power it seems timely and appropriate to find the American Dietetic Association interested in learning how the American soldier is fed. I can assure you that the American soldier also has a very lively interest in the same subject—with more emphasis, perhaps, on "when" than on "how".

Nothing is more important to an army than food. The greatest single factor in building and maintaining high spirit and morale in a fighting organization is the regular service of palatable food. Good health and bodily vigor are as essential to a fighting man as ammunition to a gun. Proper food is the "line of departure" for good health.

Modern war with its lightning speed, whirlwind devastation and nerve-shattering machines, lays heavy toll upon the physical and nervous stamina of men. Not only must the quantity of food be adequate for men who are under the strain of war but the variety must provide all the constituents of a properly balanced diet.

The subsistence of an army in the field is a difficult problem and one that can be solved only by careful preplanning and unceasing supervision. Napoleon once said "Nothing succeeds in war except in consequence of a well-arranged plan."

It is for the purpose of explaining the peacetime subsistence activities of the Army and the plans for its subsistence in the field, that I have the privilege of appearing before you today.

In Army parlance the food which is provided for one man for one day is called a "ration", and while regulations define and prescribe several different rations—such as Garrison Rations, Field Rations, Reserve Rations, Alaska Rations, and others—they are all intended to provide the same thing; that is, food for one day. Subsisting an army includes the procurement, inspection, distribution, storage, issue, preparation, and service of food. The work involves a knowledge of raw and processed foods, of storage requirements and spoilage factors, knowledge of nutrition and mess management, and skill in preparation and service of food.

The responsibility of subsisting the Army lies principally in the Quartermaster Corps which buys, stores, and issues all the food, and conducts training schools for mess operators, commissary men, food inspectors and purchasing officers.

The Garrison Ration is used in peacetime and is the basis for issue in the field as shown in table on page 227.

The ration consists of 39 components. The quality of each item is prescribed by federal specifications.

This ration is not issued in kind but is used to establish the cost of a balanced diet deemed adequate for very active men. Here is the way it works. At the beginning of each month, the post

[1] Presented at the Exhibitors Luncheon, American Dietetic Association, New York, October 22, 1940.

ARTICLE		QUANTITY
Meat:*†		
Bacon	ounces	2
Beef, fresh‡	ounces	10
Chicken, fresh	ounces	2
Pork, fresh	ounces	4
Eggs, fresh	each	1
Dry vegetables and cereals:		
Beans	ounces	.5
Rice	ounces	.6
Rolled oats	ounces	1.5
Fresh vegetables:		
Beans, string, canned	ounces	3
Corn, canned	ounces	2
Onions	ounces	2
Peas, canned	ounces	2
Potatoes	ounces	10
Tomatoes, canned	ounces	2
Fruit:		
Apples, canned	ounces	1.5
Jam or preserves	ounces	.5
Peaches, canned	ounces	1.2
Pineapple, canned	ounces	1.2
Prunes	ounces	.3
Beverages:		
Coffee, roasted or roasted and ground	ounces	2
Cocoa	ounces	.3
Tea	ounces	.05
Milk:§		
Milk, evaporated	ounces	1
Milk, fresh	ounces	8
Lard:		
Lard	ounces	.64
Lard substitute	ounces	.64
Butter	ounces	2
Flour, wheat¶		12
Baking powder	ounces	.09
Macaroni	ounces	.25
Cheese	ounces	.25
Sugar	ounces	5
Cinnamon	ounces	.014
Flavoring extract	ounces	.02
Pepper, black	ounces	.04
Pickles, cucumber	ounces	.16
Salt	ounces	.5
Sirup	ounces	.5
Vinegar	ounces	.16

* In Alaska the beef component will be increased by 10 per cent, the bacon component by 33⅓ per cent, and the vegetable component by 20 per cent.

quartermaster obtains bids from food companies for the supply of each of these items in the quantity which the troops will use during the ensuing month. He awards contracts to the lowest bidders. From the prices thus obtained, the cost of each item and the money allowance of the whole is established. The value of the ration will vary according to the locality—for example, the ration this month in Ft. Sheridan, Illinois, is .3843 cents while at Ft. Oglethorpe, Georgia, it is .4324 cents—but in each case it provides the same food purchasing power. On each post is a grocery store which we call a commissary. It is not much different from the average grocery store except that not so many varieties and different brands of products are carried and very few novelties or specialty products are stocked. The mess sergeant goes to the commissary and buys food on a charge account basis. He may purchase any or all of the three hundred or more items which are carried in the commissary. He can use beef, for example, as often or seldom as he wants. Naturally he is presumed to know the business of mess management —and usually does—or ceases to be a

† On Thanksgiving Day and on Christmas Day the meat component will be as follows: Turkey, drawn 25 ounces; turkey, undrawn 28 ounces.

‡ Alternate fore and hind quarters.

§ In the Philippine Islands and at remote stations where it is impracticable to procure fresh milk, the milk allowance will be 6 ounces evaporated milk.

¶ When it is impracticable to bake soft bread, or if for any reason it is more economical to purchase than to bake it, soft bread will be a component in lieu of an equal quantity of flour.

In such instances it is prescribed that 8 ounces of bread, soft, and 4 ounces of flour will be the component in lieu of the flour component.

mess sergeant. Under the Garrison Ration system, the variety of food served in a day, week or month is distinctly the business of the mess officer and mess sergeant of each organization. The unit commander may not, however, shirk the responsibility of seeing that his mess is functioning properly and that his men are provided with an adequate, balanced and properly prepared diet.

At the end of the month the money credit of each organization, based upon the number of rations served during the month, is balanced against the purchases made at the commissary. The organization receives cash for any saving it has made, or must promptly pay its bill if it has overdrawn its credit balance.

THE FIELD RATION

When the Army is in the field in time of war, the Garrison Ration system is not used. The ration-savings privilege is suspended and troops are provided with a daily allowance of foodstuffs—called "rations in kind". This is called the Field Ration. Many things happen in the field which tend to disturb or interrupt the normal daily flow of food supplies to the front. It is therefore necessary that extra quantities of nonperishable items be carried on the truck trains which accompany the troops and also that each man has a reserve of food which he carries as part of his personal equipment. To facilitate instructions concerning the purchase, storage and issue of food in the field, the Field Ration has been classified by intended use and defined in regulations as either Type "A", "B", "C", or "D".

The Type "A" Ration is based on, and conforms, as nearly as possible, to the Garrison Ration. It will ordinarily include such items as fresh meats, bread, butter, and possibly fresh fruits and vegetables and will be issued daily whenever circumstances permit. Substitutes for the components of the Garrison Ration, prescribed by regulations, are the bases for this ration as shown in table on page 229.

This is a small section of the regulation showing authorized substitutes for components of the Garrison Ration. Note that each substitute is calculated to provide approximately the same caloric value as the ration item.

The Type "B" Field Ration contains only nonperishable items and does not require refrigeration. It includes canned meats, evaporated milk, hard bread, and other similar items. One Type "B" ration is carried on the Field Train and usually one is carried in stock at the railhead. It is intended for use when failure of transportation or other reasons make issue of the Type "A" impossible.

The Type "C" Field Ration consists of six cans of prepared food. Three of the cans contain different combinations of meat and vegetables. These are called the "M" (or "Meat") unit and are intended to be consumed at the morning, noon and evening meals. The other cans contain whole milk crackers, soluble coffee, cube sugar, and a chocolate wafer. This is called the "B" (or "Bread") unit. One "B" plus one "M" unit constitutes a meal. The ration is carried by the soldier as part of his personal equipment. It may be eaten hot or cold and is intended for use when circumstances prevent the issue of either the "A" or "B" ration. It has proved quite satisfactory as a travel ration and for chauffeurs or other similarly engaged

COMPONENT ARTICLES	QUANTITIES	SUBSTITUTIVE ARTICLES	QUANTITIES
Beef, fresh or frozen...ounces	10	Lamb, fresh or frozen.....ounces	10
		Mutton, fresh or frozen.....ounces	10
		Veal, fresh or frozen.....ounces	10
		Beef hearts, fresh or frozen.....ounces	10
		Liver, beef, fresh or frozen.....ounces	10
		Beef, corned, canned.....ounces	8
		Pork, fresh or frozen.....ounces	10
		Bacon.....ounces	6
		Fish, fresh or frozen.....ounces	10
		Fish, canned.....ounces	8
		Hash, corned beef canned.....ounces	10
		Turkey, dressed, undrawn.....ounces	16
		Fowl, undrawn, fresh or frozen.....ounces	16
		Ham, smoked.....ounces	9
		Shoulders, picnics, smoked.....ounces	10
		Sausage, fresh or frozen.....ounces	8
		Sausage, canned.....ounces	8
Bacon.....ounces	2	Beef, fresh or frozen.....ounces	4
		Pork, fresh or frozen.....ounces	3
		Fish, pickled (mackerel).....ounces	4
		Ham, smoked.....ounces	3
		Beef, corned, canned.....ounces	3
		Hash, corned beef, canned.....ounces	4
		Sausage, canned.....ounces	3
		Pork, salt.....ounces	3
		Turkey, dressed, undrawn.....ounces	6
Chicken, undrawn, fresh or frozen.....ounces	2	Turkey, undrawn, fresh or frozen.....ounces	2
		Ducks, undrawn, fresh or frozen.....ounces	2
		Geese, undrawn, fresh or frozen.....ounces	2
		Fowl, undrawn, fresh or frozen.....ounces	2
		Beef, fresh or frozen.....ounces	2
		Pork, fresh or frozen.....ounces	2
Pork, fresh or frozen...ounces	4	Beef, fresh or frozen.....ounces	6
		Bacon.....ounces	2
		Ham, smoked.....ounces	3
		Sausage, pork, canned.....ounces	3
		Sausage, pork, fresh.....ounces	3
		Pork, salt.....ounces	3
		Pork, pickled.....ounces	4
		Turkey, dressed, undrawn.....ounces	4

soldiers. This ration is sometimes called the "Reserve" Ration.

The Type "D" ration is the "Emergency" Ration. It consists of sweetened chocolate, stabilized to a high melting point by the inclusion of oat flour. It is put up in four-ounce bars and wrapped with material which will protect it against gas and moisture. Each bar provides about 600 calories. It is intended that several cases of these bars will be carried on the combat trains or company kitchens for use in an emergency when all other sources of food supply are temporarily interrupted. It will be issued to men who are dispatched

from the main column on patrol, scouting duty, or other missions where the issue of other rations may be impractical. It may also be used as part of the "C" Ration or issued daily to front line troops as a confection.

Method of issue in the field. Troops in the field do not have opportunity to select their food. They must accept and make the best possible use of the items which are issued to them. Responsibility for the quantity, variety and constancy of supply rests upon the Quartermaster Corps. The impetus of supply is always from the rear. Combat troops must be left free of all supply worries in order that they may be free to devote their entire attention to the enemy.

Food is purchased in the Zone of the Interior or in the rear areas of the Theater of Operations. It is shipped forward and stored in warehouses along the Line of Communications. Quartermasters in the Theater of Operations draw this food from the warehouses, cold storage plants, field bakeries, and field coffee-roasting plants, assemble train loads of balanced rations and ship them forward to troops in the Combat Zone. Truck trains come to the railheads and carry the food on out to the company kitchens. The number of rations issued daily to each organization is based upon the strength return submitted by it on the previous day. Regimental and battalion supply officers are responsible for each company getting its proper number of rations.

In setting up a purchasing schedule in the Zone of the Interior, consideration must be given to climatic conditions at the front, type and availability of transportation, length of haul, storage facilities, and other similar items.

Purchasing officers and those responsible for the loading of ships at ports of embarkation must maintain a steady flow of the prescribed amount of different items into the Theater of Operations. Plans must be made to store sufficient quantities at the front to assure that there will never be a shortage. The extent of stock thus stored will depend upon the strength of the field force, amount of food which can be purchased locally at the front, etc.

The following table is an example of the storage of food for troops at the front. It is used only as an illustration. A similar table would have to be prepared for each land force operating in a different area. This table presupposes the availability of refrigerator storage for 57 days of the perishable components of the Type "A" ration. Such a storage system is sometimes called "the pipe line of supply"—items longest in storage are taken out at the faucet end. Newly purchased items are placed in the line at the reservoir or pumping station:

Suggested Normal Stockage of Field Rations

Number of Days for Numerical Strength Involved

	TYPE A	TYPE B	TYPE C	TYPE D
Depots, Zone of Interior	30	15	15	5
Base Depots, Theatre of Operations	15	15	5	5
Intermediate Depots, Theatre of Operations	10	10	3	3
Advance Depots, Theatre of Operations	2	5	2	2
Regulating Station	—	1	2	2
Railhead	—	1	—	—
Divisional Trains	—	1	—	—
Regimental Trains	—	—	1	—
Company or Combat Trains	—	—	—	1
Totals	57	48	28	18—151

Most of the difficulties connected with the issue of rations in the field are concerned with transportation and storage.

The shipping weight of one ration is $6\frac{1}{4}$ lb. It occupies $1\frac{9}{10}$ cubic feet of space. Forty-four per cent of the ration is of perishable nature and 30 per cent of the ration must be handled in refrigerated transportation and storage.

At the end of the World War we had two million men overseas. The daily supply of food for this force weighed 6250 tons, of which 1875 tons had to be kept under refrigeration. It occupied 3,800,000 cubic feet of space. In terms of transportation the ration for one day moved toward ports of embarkation in about 200 loaded freight cars and was hauled away from ocean terminals to warehouses in the same number. Each day these provisions filled one cargo ship. Because of the time required to cross the ocean, there were never less than seven such vessels in motion toward Europe. The ultimate delivery from railheads to troop kitchens involved the use of over 2000 three-ton trucks per day, most of which had to travel at night over muddy or shell-torn roads, to thousands of obscure and constantly changing destinations.

Storage likewise presents many serious problems in the field, such as means of refrigeration, protection from gas, protection against unfavorable climatic conditions, shelter from the elements at railheads and ration dumps, and many other similar problems.

These subsistence problems must also be considered in connection with the greater problem of the hurried movements of masses of men to and from the front; the transportation of huge quantities of ammunition and other battlefield supplies; with the evacuation of sick and wounded, with transportation disorganized by aerial bombardment, with overburdened systems of communication and with traffic blocks on most rail and highway nets. To minimize storage and transportation problems in the theater of operations, considerable attention has been given to methods of processing and packaging food to eliminate waste material, reduce spoilage factors, lower weights, and conserve space. Time prevents explanation of the many interesting and worthwhile things which have been accomplished or are now under consideration. One example will serve to illustrate the trend along this line. As the result of a study and test made by the Quartermaster Subsistence Research Laboratory in Chicago in 1935, it was found that a saving of 300 per cent in space and 26 per cent in weight could be made by boning and trimming carcass beef, cutting the meat into six-pound pieces, compressing and freezing it into fifty-pound uniform packages. Dehydrated vegetables, fruits, egg, milk, soup powders and several forms of concentrated foods have been studied and tried.

A test of some of this dehydrated material was recently made by serving a meal at a soldiers' mess which included cream of tomato soup, roast beef with brown gravy, mashed potatoes, creamed carrots, cole slaw, cranberry jelly, apple and pumpkin pie. The only item not prepared from dehydrated material was the roast beef and gravy. The men appeared to relish the food, offered no complaints, very little criticism, and gave it considerable praise.

The value of such material for field use becomes more apparent when it is realized that it offers little or no storage problem and provides remarkable sav-

ings in space and weight. For example, one cubic foot of dehydrated cranberry flakes will provide 1263 two-ounce servings as compared to 468 servings from a cubic foot of canned cranberry jelly. One pound gross weight of the cranberry flakes provides 109 servings as compared to 6½ servings of the same weight of the canned product.

The food value of the dehydrated material is equal to that of canned food so far as we know. Accurate information on vitamin and mineral values will be obtained from a test now being conducted by the Nutrition Committee of the National Research Council.

Now just a word concerning the nutritive value of the Army ration. Below is an analysis, made by the Department of Agriculture, of the 39 components of the Garrison Ration, together with a chart of the standard which they established as being required by a very active man.

	U.S. ARMY RATION	DEPT. OF AGRICULTURE* STANDARD FOR A VERY ACTIVE MAN
Energy value.....calories	5138	4500
Protein.....gm.	148.81	67
Fat.....gm.	246	—
Carbohydrates.....gm.	581	—
Calcium.....gm.	.74	.68
Phosphorus.....gm.	2.08	1.32
Iron.....gm.	.02313	.015
Vitamins:		
A.....A.C.S. Units	4866	4000
B.....I.U.	1173	1000
C.....A.C.S.	93	100
G.....A.C.S.	771	900

* U.S.D.A. Cir. 296, p. 26.

Note that the only deficiencies in the Army ration are in vitamins C and G. Note also that the Army ration exceeds the standard in all other elements. Remember, we do not issue this ration. We use it only as a basis for computing ration costs. We know from tests that in time of peace our men do not consume either the quantity of protein or the calories shown in this analysis. Fresh fruits and vegetables are served in the average mess in abundance and it is therefore believed that no deficiency exists in vitamins.

Providing a balanced diet to men in the field is a different story. It is a problem surrounded by a thousand "ifs". We feel that no conceivable plan can ensure a well-balanced diet to men in the Combat Zone every day. Combat organizations ordinarily do not remain in the Combat Zone for extended periods of time. They have to be relieved by fresh troops. But men in the front lines who have to face bullets and bombs, have also to face difficult supply conditions. The principal concern is about the quantity of food which reaches the front line.

While the men at the front think about food only in terms of quantity, it seems that that very fact makes it important that those responsible for the supply should plan methods for the delivery of a balanced diet as continuously as possible to all men at the front.

There exists in the National Research Council a Committee on Nutrition, which, under the chairmanship of Dr. Russell Wilder, is actively engaged at the present time in a study of the several problems relating to vitamin and mineral sufficiency in the military diet. This work is in collaboration with the Office of the Surgeon General and the Subsistence Branch of the Quartermaster Corps. Considerable attention is now

being given to the possibilities of enriching certain basic foods such as cereals with vitamins, particularly the B-complex, and also certain minerals.

In an attempt to cover the subsistence activities of the Army in a short period of time, I realize that many of the details, some of great interest, have been left untouched. There is, for example, the development of gasoline-burning field kitchens and bakeries, studies of special rations for arctic use, preparation of specifications for all types of food, inventory of our national productive capacity for special food items, and many other subjects which are directly connected with subsistence or which indirectly affect the feeding of soldiers.

We have been able to obtain some information about the food service in other armies. Germany has made great effort to provide her soldiers with an ample and well-balanced diet. So have other belligerents. But geographical circumstances have made subsistence problems very great to all European nations. We Americans have no worries as to our food sufficiency. Our unlimited food resources plus our ability to organize and operate on a mass production basis assure that we will never be confronted with an actual shortage of food, either for the folks on the home front or for our soldiers on the battle front.

In conclusion, permit me to state that we believe our plans for Army subsistence in both peace and war warrant the unqualified assertion that American soldiers are, and will continue to be, the best fed fighting men on earth.

Synthetic Vitamins vs. the Concentrates

THE AVAILABILITY OF SYNTHETIC VITAMINS is of distinct advantage in the treatment of acute deficiencies. The dramatic responses which have been obtained through the use of some of the pure preparations are familiar to every practitioner. However, the physician must be more alert than ever before in his diagnosis, since any one vitamin can relieve the symptoms resulting from a lack of only that specific factor. The crude concentrates which are gradually being replaced by the purer vitamins are perhaps less effective in speed of action, but certainly more valuable in multiple deficiencies.—*Gordon, E. S., and Sevringhaus, E. L., Vitamin Therapy in General Practice, Chicago: The Year Book Publishers, Inc., 1940.*

THE MEDICAL SUPERVISION OF HOSPITAL FOOD HANDLERS[1]

M. J. LEPORE, M.D.

Personnel Medical Department, The Presbyterian Hospital, New York

IN AN institution where 5500 meals are served daily, the problem of the medical supervision of the 400 food handlers involved is of major importance, especially when the institution is a hospital and many of the food consumers are patients who need to be protected from any possible food infection. Where the group of people involved is so large, it is unwise and often impossible to burden the resident medical staff with such supervision. The medical supervision of food handlers at the Columbia Presbyterian Medical Center, New York, is in charge of the Personnel Medical Department which is responsible for the medical supervision of a group of about 2500 employees. The present report concerns only one phase of the work, the supervision of food handlers. There is nothing extraordinarily new about the procedure employed, but a description of the methods may serve as a useful guide to other institutions faced with similar problems.

The foundation for careful supervision of our food handlers is the pre-employment examination. This comprises the following:

A careful history. To a certain extent the accuracy of this is dependent upon the individual giving it. However, it is often possible to supplement the history with information derived from the applicant's references, hospital records, etc. It is astonishing how often a previously negative history can be significantly modified when the applicant's memory is prodded by the mention of abnormal findings encountered in either physical examination or laboratory study. This has occurred, in our experience, especially when positive Wassermann reactions or chest x-ray findings of pulmonary tuberculosis have been encountered. Often the need for a job is so acute that the applicant will deny everything. A fair attitude on the part of the medical examiner will often lead to better and more reliable history giving. My rule, wherever subterfuge is suspected, is to warn the applicant that defects, in the first place, will not necessarily bar him from employment, whereas false statements will be severely dealt with.

A thorough physical examination. Especial emphasis is placed on: the presence of contagious diseases; the presence of venereal diseases in their communicable stages; the presence of tuberculosis; and personal cleanliness.

Laboratory studies. As a routine, we require an x-ray of the lungs, blood Kline test, urine examination, stool culture for organisms of the typhoid, paratyphoid and dysentery group, and stool examination for ova and parasites. Other studies are done if the individual case warrants it.

In order to guard against the substitutions of specimens by dishonest persons, all specimens are collected through the

[1] Read before the Symposium on Personnel, American Dietetic Association, New York, October 21, 1940.

department facilities under the supervision of the nurse in charge.

If the pre-employment examination is satisfactory, the employee is permitted to start work. From this point on the utmost cooperation is needed between the Nutrition Department heads and the physician. This is essential, since financial limitations permit routine re-examinations of food handlers but once a year. Anything may happen in this interval, and if the medical supervision of food handlers during this period is unsatisfactory, the value of the most thorough pre-employment examination and annual check-up may be nullified. By careful observation and education of their subordinates, the Nutrition Department heads see to it that all those who are ill, even with minor ailments, report to the Personnel Medical Department for examination. In this way it has often been possible to detect communicable disorders in their early stages and thereby prevent the spread of infection through these sources. By this means it has been possible to bridge the gap between annual examinations with considerable success.

In actual practice, the most troublesome disorder occurring in previously healthy food handlers has been diarrhea due to various infectious agents. In order to prevent the spread of these disorders, the following routine procedure has been established:

1. All food handlers having diarrhea or gastro-intestinal upsets of any sort are to cease work immediately and report to the Medical Department for examination.

2. A partial physical examination is done, and a stool specimen is sent to the laboratory for culture.

3. The food handler is not to return to work until the stool culture report is satisfactory.

4. Since many of these disorders are communicated because of poor personal habits, the food handler is instructed concerning them. Signs are placed in all lavatories urging thorough and frequent washing of the hands with soap and water.

Another troublesome group of disorders is the upper respiratory infections. The exclusion from food handling of persons with colds, sore throat, etc., is largely a matter for the discretion of the physician in charge. However, it is obligatory that all food handlers with upper respiratory infections cease work and report for medical examination and advice. Throat cultures are taken if necessary, especial precautions being taken when cultures are positive for hemolytic streptococci. In an attempt to decrease the incidence of colds in this group, vaccine therapy is at present the object of controlled study in this department.

The program outlined above naturally entails considerable work by the Personnel Medical Department as well as a certain amount of interference with the smooth running routine of the Nutrition Department. This activity would be hampered greatly by lack of cooperation between the various departments and the Medical Department. The attitude of the hospital administration toward these matters is of vital importance, for an alert, progressive administration which supports the personnel physician will often spell the difference between success and failure.

One administration policy of great aid in furthering this program at the Colum-

bia Presbyterian Medical Center is that of a generous attitude toward sick-leave. This makes it possible to exclude ill persons from work without stopping their source of income. This encourages food handlers who are ill to report their ailments sooner than they otherwise would. Of course there is always the problem created by malingerers who are merely trying to take a few days from work. These individuals will often tax the ingenuity of the examining physician to the utmost. A compulsory anoscopic examination will discourage some of those trying to fake an attack of diarrhea. A suspicious attitude toward any absence occurring over the week-end will also be helpful in identifying malingerers. In this regard a few words are indicated concerning a clinical picture which crops up frequently and requires firm management—a disorder which we have named "weekenditis". This is a "disease" which usually starts on Friday night. Clam chowder or some form of fish is usually blamed. The symptoms usually consist of nausea, vomiting and headache. The patient is invariably unable to work on Saturday or Sunday. On Monday when the patient appears for examination in the Personnel Medical Department, he is in the pink of condition and has no complaints. Physical examination is negative. The "disease" often affects three to five people in the same department. When discovered, vigorous measures are needed to prevent its spread, for it is highly contagious. The first step is a firm lecture to the offender; the second is a telephone conversation with the Nutrition Department head who in turn deals with the matter as a breach in department discipline. The incident is made a part of the employee's permanent medical record, and often proves useful at a later date when the same question may arise.

These are merely a few of the problems which confront the physician who is responsible for the supervision of food handlers. It is quite obvious that without thorough cooperation between the Nutrition Department heads and the personnel physician, any attempt to control satisfactorily the spread of disease from food-handling sources is doomed to failure. It is in the hope that it will promote this team work that this report has been presented.

Diet and Growth

Some of the latest studies on dietary factors affecting growth have brought out the exceedingly interesting and important point of how much more important quality is than quantity. When rats were given a diet adequate in minerals, vitamins, and first-class (animal) protein but so deficient in calories that the growth rate was retarded, the adult size attained was of course subnormal, yet the health of the adult and the length of life were normal, even though the amount of calories was subnormal during most of the life of the animal. In fact, the males in the retarded group lived somewhat longer; there was no difference in the females.—*Borsook, H.: Vitamins: What They Are and How They Can Benefit You, New York: The Viking Press, 1940.*

ELECTRICITY IN THE INSTITUTION KITCHEN

KATHERINE D. SPENCER

Cook County Institutions, Oak Forest, Illinois

THE serving of 35,000,000 meals in the past eight years has given the electric cooking equipment at the Oak Forest Institutions an exceptionally vigorous field test. As I have had complete charge of the Food Department in these institutions during this period and both the equipment and its operation have been under my observation, a factual report on our experiences should be of interest both to dietitians and officials charged with the purchasing of food service equipment.

This report will consider the equipment we use from the following standpoints: variety and types of equipment; initial cost; economy of operation; dependability in performance; flexibility; cleanliness and health.

As the problems of every hospital, institution, and commercial food service establishment differ in relation to size, type, location, class of patients, inmates or guests, and many other factors, a description of such factors as relate to food services in the Oak Forest Institutions is a necessary introduction to this report.

GENERAL DESCRIPTION

Oak Forest Institutions comprise the following (*see* table in opposite column).

At an average of three meals a day, this totals 12,195 meals prepared in and served from our kitchens daily.

Because of the widely varied service problems involved in food service for this diversified group of institutions, many types of food preparation and service equipment are involved. The extensive use of inmate or patient help with a minimum of paid employees, who act largely in supervisory capacities, is another factor having a definite bearing on the type of equipment employed.

Only two types of fuel—electricity and steam—are employed in cooking. Both are generated in our own power plant and are complementary in their production. Steam is produced not only to provide electricity, but also for heating, laundry, hot water, sterilizing, and many other uses throughout the institution. In many instances the exhaust steam, which after passing through the engines drives the electric generators, is as useful as "live" or unused steam. Our production of electricity, therefore, is largely a "by-product" of our steam requirements.

Power plant records at Oak Forest show that because of this condition, as well as the fact that load balance provided by the electric kitchen assures use of electric energy at periods when the generators would otherwise be idling under a light load, our electric energy

INSTITUTIONS	AVERAGE POPULATION
Tuberculosis Hospital	468
General Hospital	607
Old People's Home	2240
Hospital for Irresponsible Patients	318
Total Population	3633
Staff and Help	432
Total for Meals	4065

can be produced and delivered at a cost of one-half cent per kilowatt hour.

VARIETY AND TYPES OF EQUIPMENT

Steam is used for stock kettles in which soups, boiled vegetables, stews, etc., are prepared. Pressure vegetable steamers are used for steaming potatoes, beets and other root vegetables. Electrical equipment in the main kitchen consists of four 4-ft. electric ranges, one 2-deck roasting oven of 960 lb. capacity, and four 3-deck baking ovens each of 360 lb. capacity.

Power equipment in addition to electrically-heated equipment includes an 80-qt. mixer, a food chopper, a one-barrel dough mixer which we use for mashing potatoes, and a meat chopper.

The food is carried from the kitchens to all wards and dining rooms by means of electrically-heated food conveyors. We have several different types of these conveyors, suitable for the different kinds of service required in the institution. Some of the conveyors are equipped with electrically-heated coffee urns, some contain only meat pans and deep wells, and others are equipped to carry both hot and cold food. In one section, therapeutic diet trays are carried in a specially constructed, electrically-heated tray conveyor.

The employees' serving rooms are equipped with electric ranges, electric toasters, and electrically-operated dishwashing machines, in addition to automatic electric refrigerators.

Serving kitchens for the hospital wards are equipped with electrically-operated dishwashing machines, electric toasters and electrically-operated refrigerators.

Although fans are not usually considered strictly a part of the equipment of the food department, they do play a very important part in the maintenance of proper ventilation. Kitchens, dining rooms, and adjacent offices are all ventilated with electric fans.

The bakery, which has an output of approximately 2000 loaves of bread per day in addition to pastries, is completely electrically-equipped with dough mixers, a cake mixer, divider, flour blender, flour conveyor, exhaust fan, and an automatic electric bread slicer and wrapper. The bread is sliced uniformly, ensuring a standard number of slices from each loaf, and thus facilitating the calculation of food costs and caloric intake for each patient and inmate. Waste of bread has been reduced to a minimum as the waxed wrappers tend to keep the bread fresh and palatable.

The equipment in the bakery consists of two double-deck ovens, each deck having a capacity of 252 one and one-half pound loaves; one 3-deck pastry oven with a capacity of thirty-six 9-in. pies, two 5-bbl. dough mixers, one doughnut stove, and one 15-gal. steam boiler.

In the pasteurizing room, where over 600 gal. milk is pasteurized daily, the process is carried out by means of steam and the necessary milk pumping is done with electric milk pumps. Our cream separator is also electrically operated. The milk cans are washed and sterilized in electrically-operated equipment.

INITIAL COST

The initial cost of electric cooking equipment compared with the most modern gas equipment—which incorporates such features as the automatic constant pressure regulators, automatic pilots, oven insulation and automatic

temperature controls, heat-diffusing special alloy cooking tops, etc., necessary for it to approach electricity in operating characteristics and efficiency—is very nearly equal. Compared to the cost of the standard types of gas equipment, electric counterparts will average from 20 to 50 per cent more in first cost. However, to determine *true cost* of such a capital investment as major cooking equipment, initial cost must be considered in relation to length of useful service. Particularly in institutions which have a high factor of permanence and continuity of operation, the only true measure of cost is "useful life in years per dollar of investment." As we have no other fuel equipment at Oak Forest with which to draw a direct comparison, we can only state our experience and let interested persons compare it with the records in their own institutions.

The original electric equipment installed in the Oak Forest Institutions in 1924 is still in use without a single replacement after continuous daily service of from 12 to 20 hours. Its efficiency in cooking and baking has not decreased during these years. Additional equipment of more modern design and incorporating improved features has been added from time to time to care for the growing population of the institutions.

ECONOMY OF OPERATION

For preparing an average of 12,000 meals a day with the equipment previously described, the average daily electric energy consumption is 1050 kilowatt hours or 88 watt hours per meal. In comparing our operation with that of other institutions with which we have reviewed operating data, we find that we are quite low. This is due to three factors:

1. A relatively large proportion of our foods are cooked in steam-heated stock kettles and steamers.
2. Our proportion of oven-cooked foods is exceptionally high as we make it a practice to utilize the economy of oven cooking wherever possible. Many foods cooked on range tops in other institutions may be cooked at least as well, usually better, and far more economically, in an insulated, heat-retaining oven.
3. The supervision of our dietitians and supervisory employees, who know that "medium" or "low" heats on ranges are sufficient to keep foods cooking at maximum rate after reaching boiling temperature—and who *use* this knowledge in supervising cooking operations.

In making fuel cost comparisons, one factor is often overlooked. While all heat may be measured in British Thermal Units (BTU), different kinds of fuel according to the nature of their application can utilize the heat they generate in widely varying proportion. Combustion fuels, such as coal, oil and gas cannot utilize their full heating value because of certain technical requirements of the combustion process and limitations in application well known to engineers. These requirements can be demonstrated easily by simple experiments.

Large scale laboratory experiments and field tests wherein electricity has replaced gas as a cooking medium have shown the utilization ratio of the most efficient of flame fuels, gas, to electricity averages 2.68 to 1. In other words, in overall commercial cooking and baking

operations, it will require 2.68 BTU of gas to do the same amount of actual cooking done by 1 BTU of electricity.

Each kilowatt hour of electricity generates 3413 BTU. Chicago uses a mixed gas with an average content of 800 BTU per cubic foot. Oak Forest uses 1050 kilowatt hours a day for cooking; 1050 × 3413 BTU equals 3,583,650 BTU per day. Using gas, it would require 3,583,650 × 2.68 or 9,604,182 BTU per day. At 800 BTU per cubic foot this would be 9,604,182 BTU divided by 800 or 12,005 cubic feet per day. If the unit known as the therm, or 100,000 BTU, is used as measurement, this would be 9,604,182 BTU divided by 100,000 or 96.04 therms per day.

Since electricity is produced at Oak Forest at $0.005 per kilowatt hour and 1050 kilowatt hours per day are used for cooking, it follows that the actual daily cost is 1050 × $0.005 or $5.25 per day. To equal this cost it would be necessary for 800 BTU Chicago gas to be priced at:

$$\frac{\$5.25}{12} \text{ M/cu. ft.} = 43.8¢ \text{ per M/cu. ft.}$$

or

$$\frac{\$5.25}{96 \text{ therms}} = 5.5¢ \text{ per therm.}$$

A similar analysis, worked in reverse, will show comparative electric costs.

In the Oak Forest Institutions where we manufacture our own electricity and gas would have to be purchased at rates considerably in excess of the figures shown above, electricity is obviously the first choice of fuel on cost alone. However, there are still other factors to be considered.

DEPENDABILITY OF OPERATION

In the past eight years our only expense for service has been two range hot plates out of a total of twelve, and an occasional broken switch or burned-out fuse due to the carelessness of employees. In the same period, we have had no service whatsoever on the baking and roasting ovens.

The service outlined above was simple and easily and quickly taken care of by the institution's own engineers. We have had no outage resulting in loss of time or even delay of a meal. What a feeling of assurance there is in knowing that when the switch is turned there will be an ample supply of clean, fast, safe, electric heat, automatically controlled at the exact temperature needed to secure the best results!

FLEXIBILITY

The control which the cook or baker exercises over electric cooking equipment is a definite factor in increasing both productive capacity and quality of cooking in the institution. Thermostatic control ensures a maintained temperature, possible to obtain with gas as well as electricity. Only with electricity, however, is it possible to obtain two other types of control just as essential to uniformity in production:

1. Maintained Intensity—or the accurate "measured heat" of the fixed energy input at any given switch setting, evenly distributed over the entire heated surface.
2. Direction of Application—or the ratio of top and bottom energy input in ovens so essential in securing perfect baking of such diversified products as fresh apple pies and butter cookies.

Only with electric equipment is it possible to secure the required heat intensity on *all or any part* of range surface through the individual control of small, independent units.

Electricity has also made possible such specialized equipment as automatic toasters, waffle bakers, etc., which remove much of the uncertainty and waste in the cooking process.

Although labor costs in the Oak Forest Institutions kitchens are not so acutely to be considered as in kitchens where inmate workers are not employed, there is much more supervisory work required of the employees. The word "automatic" in itself implies the elimination of certain actions involving human labor or attention; modern specialized, automatic electrical equipment relieves cooks from constant watching, shifting pans, adjusting drafts, valves and so forth, permitting more time to supervise inmate workers in routine jobs and, in addition, to complete their own assignments.

SAFETY AND HEALTH

The thought of safety is always to be considered, particularly in an institution using inmate workers. Automatic electric equipment, with high standards of construction, dependable thermostats and enclosed heating units, completely eliminates the danger of explosion always present with combustion fuels and reduces the danger of fires to a minimum since there is no open flame or possibility of fuel leakage.

The elimination of all possible fire hazards is most important where old and feeble people are housed. Not once in my eight years at Oak Forest have any of the kitchens or bakery been out of use because of outages in electrical equipment.

Elimination of combustion also eliminates the products of combustion including smoke and soot. This situation assists in keeping the equipment clean and lessens the labor of keeping walls, ceilings and cooking utensils clean and shining.

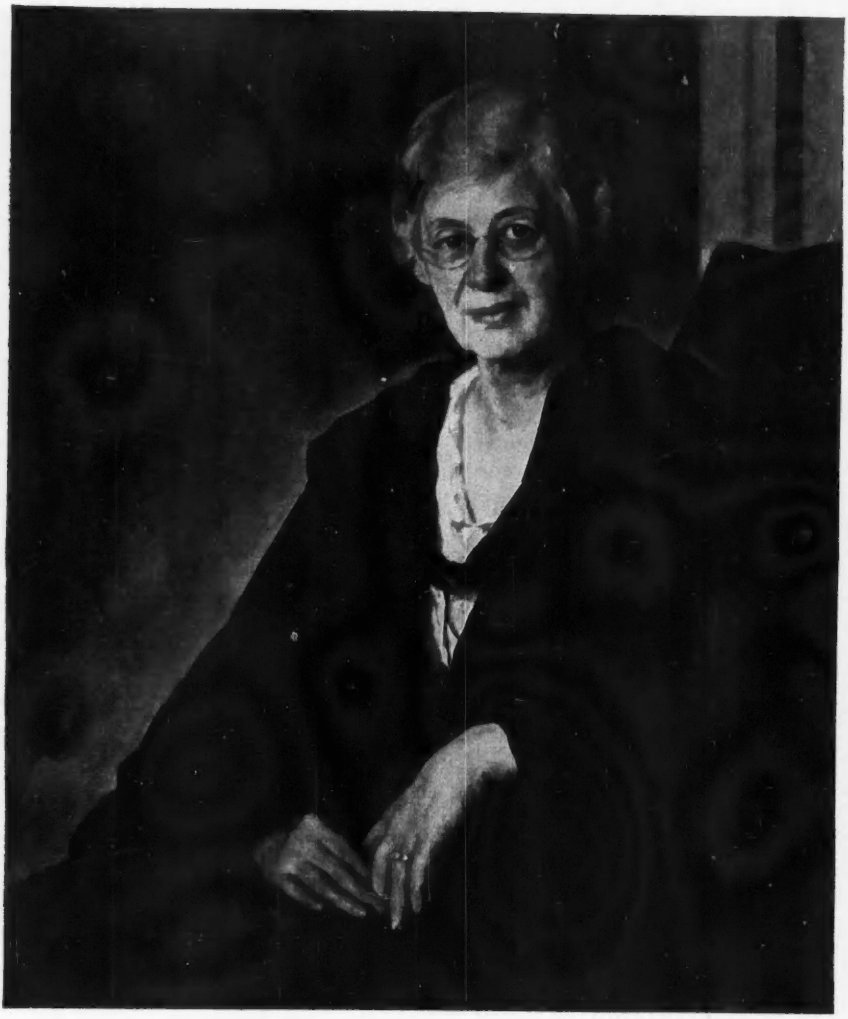
Range surfaces and tile oven decks are easily cleaned by brushing with a stiff brush and wiping with a coarse cloth. Care should be taken to keep moisture from open type oven elements, though this precaution is needless with the enclosed type heating unit. Frame and sheet metal surfaces may be scrubbed. Actually, little cleaning is required beyond routine removal of spilled and carbonized foods, grease, and dust.

Much has been written concerning the effect of working conditions on the health of workers and the related problem of the effect of health on workers' attendance records. In the majority of commercial and institution kitchens using flame fuels, health conditions prevail which would not be tolerated elsewhere. In the usually restricted quarters of the commercial and institution kitchen, the conditions of high temperature, high humidity and both chemical and physical pollution of the air by products of combustion tend to surpass health limits even though most institution kitchens install ventilation or air-conditioning equipment.

The process of combustion forms carbon dioxide or carbon monoxide gases and water. In kitchens where flame fire equipment is used, carbon dioxide fatigue effects a slowing of both physical and mental processes and a consequent reduction in personal efficiency. Carbon

monoxide not only robs the kitchen air of oxygen, but is also a serious health hazard. Fortunately, it is usually present in the minute quantities which are dangerous to health only when combustion is incomplete. However, so many factors other than the proper initial design of flame fire equipment influence the degree of continuous and complete combustion that it is almost impossible to keep all in ideal balance. That this unbalanced condition prevails at times even where combustion is perfect, is proved by the carbon deposits which appear on the bottom of pots and pans used on flame fire ranges, indicating that combustion is imperfect. In the absence of open flame these dangers are at a minimum. The water vapor produced by the combustion of the dryest of gases amounts to .09 lb. for each cubic foot of gas by the solution of the combustion chemical equation, sufficient at least to increase the humidity of the kitchen air noticeably and quite exclusive of water added by boiling, steam tables, and so on. When superimposed on the high temperature generated by the wasted heat incident to flame equipment operation, this humidity accounts largely for the uncomfortable conditions in the kitchen and is reflected in a lowered efficiency of kitchen help. Although we have a large, well-ventilated kitchen at Oak Forest, the number of people working in the kitchen tends to overbalance the spaciousness and airiness at this particular institution. In addition to the regular employees, there is a large number of inmate workers two to three of whom are required to complete the work of one paid employee, thus tending to overcrowd the kitchen. Despite this, the use of electrically-operated equipment effects better working conditions and results in an enviable health and attendance record.

In the type of institution prevailing at Oak Forest, electricity as a fuel has been very advantageous because of its low cost of manufacture, its economy because of the use of exhaust steam, its ready dependability, its performance in enabling perfect control and its cleanliness with regard to equipment and air in the kitchens and adjoining rooms. In addition, the many different types of electrical equipment and the varied uses of this equipment, make electricity the most satisfactory type of fuel when it can be manufactured by the institution or purchased at competitive rates, and where the equipment must be in continuous service for the preparation of 12,000 meals daily.



Portrait by Ivan G. Olinsky
Photograph by Peter A. Juley

MARY SWARTZ ROSE

EDITORIAL

Mary Swartz Rose
1874–1941

There are those who when they pass onward, leave us rich in memories, fortified by their precepts, yet immeasurably saddened that such as they cannot tarry longer in our midst. It is one of life's enigmas that the courageous, the strong in mind and heart, the beneficent, those who give of themselves unstintingly to others, must sometimes hasten on while in the fullness of their service to mankind. Such a one was Mary Swartz Rose, beloved teacher, scientist, wife and mother, who died at her home, Edgewater, New Jersey, on February 1. Bravely she filled out her allotted span among us, always thinking of others first, herself last, knowing that for her there was but a little while, a few precious days, before her earthly destiny must end.

A member of Teachers College faculty for nearly thirty-five years and professor of nutrition since 1921, Mary Swartz Rose became a world authority on nutrition. The list of her honors and achievements is long, indeed. Through such signal honors as membership in the Council on Foods and Nutrition of the American Medical Association, the Nutrition Committee of the Health Organisation of the League of Nations, the Harvey Society, the Yale University chapter of Sigma Xi, and many other scientific bodies, and as deputy director of the Federal Food Board, New York City, 1918–19, her worth has been recognized through the years. Her books and writings laid the foundation for the practical application of the science of nutrition, and it is largely due to her that the profession of the dietitian and nutritionist came into being. A womanly woman, her scientific interests centered on the betterment of the nutritional status of children. As the wife of Dr. Anton Richard Rose and the mother of a son, Richard Collin, her gracious spirit shone within the home as well as in public life.

As a teacher, one could not measure her worth merely in the light of the knowledge she imparted so well—she literally kindled the fire of devotion to the cause of good nutrition in the souls of her students, a fire that never will burn out. To her students of twenty or twenty-five years ago, the memory of her classroom presence is as vivid as though but a short year had passed. In the memories and hearts of all who knew her, Mary Swartz Rose will live on.

She, herself, seemed changeless as the years went by. Her ever-youthfully alert mind and heart, her sensitive understanding of people, their weaknesses and their strengths, were but a part of the lavish gifts with which she was endowed. None could surpass her sparkling wit, her zest for life and living. Yet when the end of the path of life was clearly but a little way further, she did not hesitate, but went on, serving to the end, a shining little figure. It is thus that we shall remember her.

MARY I. BARBER ASSIGNED TO ADVISE THE QUARTERMASTER GENERAL IN PREPARATION OF ARMY MENUS

The War Department announced February 11 that Mary I. Barber, food consultant to the Office of Production

Management, has, at the request of the Quartermaster General, been assigned the task of assisting in the preparation of Army menus. In this work she will collaborate closely with the Subsistence Branch, Supply Division of the Office of the Quartermaster General and at an early date will visit many Army camps throughout the country to make a thorough study of menus now in use.

The formal announcement mentioned that Miss Barber is president of the American Dietetic Association, "a group of over 4000 women holding dietetic positions in institutions, colleges, business and government." She has been loaned to the Office of Production Management by the Kellogg Company of Battle Creek, Michigan, in whose employ she has held the positions of dietitian, cooking teacher, demonstrator, and home economics director. The following is a direct quotation from the release:

Food has been Miss Barber's career, and all her life, in one way or another, she has been connected with it. Originally from Titusville, Pennsylvania, she traces her interest in good eating back to the culinary traditions of the Pennsylvania "Dutch" ancestors. This flair for food, she claims, dictated her education, and later her work.

Graduating from Drexel Institute in Philadelphia, Miss Barber started as a dietitian in a Pennsylvania hospital. This led to a teaching position in Philadelphia, where three years were spent showing young high school students the rudiments of cooking.

If the United States had not entered the World War, Miss Barber might have gone on teaching, but when the Mayor of New York sent out a call for home economists to show women how to conserve food, Miss Barber was one of the first to be enrolled. Later, this work was carried on by the New York State Bureau of Conservation, and Miss Barber continued in the job of helping the country save food. By the time the war was over, Miss Barber had not only won laurels as a demonstrator but had obtained her degree from Teachers College, Columbia University, so that for the next three years she was an instructor on foods and cookery at this same institution.

Miss Barber is also affiliated with other groups in the field of home economics. From 1932 to 1936 she was president of the Michigan Home Economics Association; and from 1937–40 vice-president of the national organization. She is also a member of the Michigan Dietetic Association, the Business and Professional Women's Club, the Altrusa Club, and the American Association of University Women.

THE AMERICAN AND HIS FOOD[1]

Writing under the above title, Professor Richard Osborn Cummings has explored rich and what to some might be unlikely sources of information on what Americans have eaten and are eating. He has delved into historic old cook books, the forgotten files of the lay press, century-old publications and medical and scientific bodies, the dusty histories of federal and state bureaus, and the infant records of now great industries. Fiction, history, biography and diary, all have served as grist to his mill. No other book on food in this editorial writer's memory, has evidenced such catholicity of taste in sources of references. In fact, except that this JOURNAL is conspicuous by its absence from the references cited, almost every type of publication, including Sears,

[1] By Richard Osborn Cummings, Assistant Professor of History, Lawrence College. Chicago: The University of Chicago Press, 1940, pp. 267. Price $2.50.

Roebuck's catalog, has been culled for juicy tidbits. The almost forgotten yet once popular writings of Lulu Hunt Peters, of Alice P. Norton, of Alfred W. McCann and his *Starving America*, pass in review, serving to remind us, among other things, that time is fleeting and fame but of the ephemeral texture of dandelion fuzz.

In this connection attention might be called to the statements of Langworthy, the federal nutritional authority of his day, which once read will cause the thoughtful to wonder what nutritional dictums of today will still be accepted 30 years hence. In 1907 Langworthy suggested that poor families might well omit oranges without materially changing the nutritive value of the diet and in the interest of lowering the daily cost of their food. In 1911 he wrote that the tonic values attributed to green plants as spring medicine were simply to be ascribed to the fact that they were "a very welcome addition to the winter food", making it more appetizing.

Among Langworthy's contemporaries of that day it is interesting, on the other hand, to note that the statements of Sherman, based on well-controlled scientific investigations, and published in 1907 *et. seq.*, with but comparatively minor modifications by Sherman himself, are as sound today as then.

Professor Cummings repeatedly shows how coming events cast their shadows before. A lady authoress of 1834, writing of *The Perils of Pearl Street*, lamented that boarding-houses served so little milk and no crisp green things. At the same time, Sylvester Graham was crying aloud for more fruits and vegetables and the use of unbolted flour. Subsequently, and as a result, Harvard University in 1833 offered a prize for the best dissertation on what diet "will ensure the greatest health and strength to the laborer", quality and quantity considered. Today, more than 100 years later, practically the same question confronts us. Sylvester Graham's name and his thesis regarding the virtues of whole wheat have carried on in the Graham crackers and bread of today and the present emphasis on whole grain products. Others of the period were not so fortunate, as for instance, Professor Agassiz of Harvard who, having adopted the German physiologist's slogan, *Ohne Phosphor, kein Gedanke*, thereupon urged the use of fish as a brain food, a plea later rather effectively spoofed by Mark Twain in his *Galaxy*.

In view of the tremendous scope of the research which preceded the writing of this book, errors appear to be relatively few and minor. For instance, it should be Maria, not Marie Parloa, and Carl, not Karl von Voit.

Within this widely inclusive and very readable account of America's foods and food habits, we learn much concerning its farm and city dwellers, their food prejudices and their fads, and their systems of transporting food. America may justly claim to have given birth to so-called "scientific" eating and to have fostered its early upbringing during the Food Administration days of the first World War. America, too, was the first to make extensive food consumption studies, and to submit demonstrable evidence of the efficacy of applying the principles of sound nutrition.

Then came the depression years, with increasing emphasis on the qualitative rather than the quantitative aspects of feeding people and the eager acceptance

of McCollum's apt phrase, "protective foods". The account brings us up to the present with school feeding programs and other mass attacks upon malnutrition being promoted by federal authorities and other interested groups. As Professor Cummings concludes:

> The science of nutrition may be said to have advanced to the point where it is firmly established not only as a branch of preventive medicine but as a major instrument of social policy.
>
> . . . . nutrition has become an expanding body of knowledge concerning certain principles which are grasped but not rigidly defined. Definition is being clarified and facilitated by experiments and observations conducted by able specialists.
>
> . . . . certain requirements of the human body have been discovered, and if the food of an individual or a group fails to measure up to these requirements, susceptibility to disease is likely to increase and physical inferiority to ensue. Accepting this view, governments, in the interest of the general welfare, have endeavored by education and subsidization to raise the level of nutrition throughout their populations in the neighborhood of, or above, these requirements.
>
> The need for education as to the significance of food choices has not been lessened by subsidization of consumers. The food-purchasing power of more than a million has been substantially increased, and the number is growing. For the full advantage of all concerned it is essential that this power should be used wisely. Cautious extension of a carefully checked program which will serve in the interest of good nutrition should promote the general welfare. Regular dividends ought to be paid in increased national health, more robust children, and a better-prepared manhood. *La destinée des nations*, reads an aphorism, *depend de la manière dont elles se nourissent.*

SPECIAL DIETS

Special diets and between meal "nourishments" are expensive items in the hospital food budget, entailing as they do increased preparation and service costs as well as raw food costs. In this issue Dr. Du Bois calls attention to the fallacious reasoning behind much of the ordering of these "special" diets. As for the "nourishments", E. M. Geraghty[1] asks, "Now tell me why these should be served to patients on soft or light diets?" She adds that they take the edge off the patient's appetite at meal-time and are expensive. If they are necessary for soft and light diets, then there is something wrong with the regular three daily meals.

In the November 1940 *Hospitals*, Mary Ruth Curfman presents the pooled results of her questionnaire, "Are Special Diets Overdone", answered by dietitians in 44 hospitals having an average bed capacity of 547 and a 2.5:1 proportion of ward to private and semi-private beds.

In 1939 from 3–43 per cent of all meals in these hospitals were special diets with an average of 21 per cent. One hospital of the 44, which was operated primarily for the treatment of metabolic disturbances and in which 90 per cent of all patient meals were "special diets", was excluded as non-representative. Special diets for private and semi-private patients ranked in the following descending order of frequency: (1) diabetic; (2) high-calorie, high-vitamin and gastro-intestinal; (3) liver and gall-bladder, kidney and urinary; (4) obesity; (5)

[1] Geraghty, E. M.: Organization and Management of the Hospital Food Service.—Part I, *Hospitals*, December, 1939.

anemia; (6) cardiac; (7) allergy. The sequence varies but slightly for ward patients: (1) high-calorie, high-vitamin; (2) diabetic; (3) gastro-intestinal; (4) liver and gall-bladder, obesity and cardiac; (5) kidney and urinary; (6) anemia; (7) allergy.

In reply to the query: do you feel that special diets are overdone? 23 dietitians answered "no", and 21, "yes." Some were non-committal, answering "sometimes", "in many cases", or "to some extent."

Of the special diets ordered, the high-caloric, high-vitamin seems to be in the ascendancy. Of the hospitals queried, 15 depend entirely upon food for such orders and 22 amplify a high-caloric diet with vitamin concentrates. The first method entailed an increase of 27 cents per patient per day over the cost of the same high-caloric diet amplified with vitamin concentrates.

While there are arguments in favor of a fairly large distribution in number and types of diets ordered, there are equally cogent reasons which would oppose the present tendency to indiscriminate ordering of these. Too often the aim is merely to cater to the finicky or too-demanding patient, whose whims might better be served through the selective menu. Too often doctors and nurses fail to appreciate the labor and cost involved in filling such orders.

In institutions in which interns are permitted to order special diets, the number and type are apt to be excessive, and the diet orders to be changed as the services rotate, to the bewilderment of both patient and dietitian!

Again, apparent uncertainty as to the diagnosis sometimes creates a tendency to "sample" various therapeutic diets, while others of the more common therapeutic diets, basically inadequate nutritionally, and originally designed only for short periods of use, are left on the order book to go on endlessly like the poet's rippling brook.

Other patients, uncooperative, ordered on weighed diets for obesity or diabetes, demand and sometimes get soft drinks and other items, thus nullifying the dietitian's work. Still others, and far too many, are ordered diets which they cannot possibly afford following discharge. And finally a few, fortunately only a few, "therapeutic" diets are ordered by doctors who evidently are influenced by current food fads.

Miss Curfman concludes that for a better understanding of the problem the hospital, through its educational program, should continue to stress the importance of the basic, adequate diet as well as the modifications employed in the therapeutic diet, and teach the difference between therapeutic and catered diets. The fallacy of food and diet fads, too, needs constant emphasis. The doctor should be interested in conferring with the dietitian in regard to the patient's diet order and any other essential points which will increase the value of her services. The dietitian should play a leading part in the educational program in normal nutrition and diet therapy. She should teach the future physician that the first requirement in the use of therapeutic diets is a familiarity with the needs of the normal organism. With the approval of the administration, she should offer a selective menu at least to the private patients, which, in itself, will give increased satis-

faction to the patient and should decrease the number of both therapeutic and catered diets. If the routine ward diet is inadequate, the dietitian should be the first to take the necessary steps in meeting the recognized dietary standards. In the main, the control of special diets seems to be a matter of education and cooperative understanding. The dietitian, with her statistics on costs for labor, food and supplies, her diet analyses and percentages, is probably the logical one to establish the basis for this control.

CURRENT COMMENT

SAFETY EDUCATION[1]

ALTA B. ATKINSON

Within the limits of this short paper it is possible only to indicate the more obvious factors to be considered in any program of safety education and to draw attention to the importance of the subject. I think we are all aware that accident prevention is one of the major problems confronting the administrator in any field where people are employed in groups. How shall we make the employee safety conscious? Slippery floors, knives thrown carelessly into drawers, cracked glasses and makeshift ladders are all hazardous in any type of operation.

The factors which cause most accidents fall into two classifications: (1) the existence of unsafe physical conditions; and (2) unsafe practices. Frequent inspection of the physical plant with immediate attention to anything which appears unsafe will help materially to correct the first situation. From the point of view of maintenance it is cheaper to make necessary repairs immediately, rather than to wait until some serious damage has been done.

Even though unsafe physical conditions may be reduced to a minimum, the possibility of accidents due to unsafe practices of the employee is ever present. Careful selection of employees, a progressive education program, and constant and detailed review of all accidents, their causes, and suggestions concerning their prevention, are effective ways of making a group of employees aware of their responsibility toward themselves and their jobs. It is interesting to note here that according to a special analysis made by the National Safety Council on the basis of the National Association Cause Code, conducted as part of a survey under the sponsorship of the American Society of Safety Engineers, 87 per cent of all work accidents involve some unsafe act on the part of the employee.

Careful selection of the employee is most important in keeping the accident percentage as low as possible. A rigid physical examination will very often reveal defects which may be contributing factors to accidents and injury later. The complete physical examination will disclose any existing hernia, defective vision or a condition of high blood pressure. An employee who shows any of the above symptoms or defects is a definite risk from the very beginning of his employment.

An effective practice in handling employee education regarding safety is to acquaint each new member of the per-

[1] Read before the Symposium on Personnel, American Dietetic Association, New York, October 21, 1940.

sonnel with the safety policy of the organization. It is most important to see that the employee has the right attitude when he starts on the job. Some organizations have very forcible rules and regulations, such as the following, which they discuss in detail with each new employee: The individual is made to realize (1) that all violations of safety rules and regulations are serious offenses; (2) that accidents are usually caused by lack of forethought on the part of the employee himself; (3) that it is just as easy to learn safe working methods as it is to be heedless and develop unsafe habits; (4) that it is a major offense not to use all safety devices properly; (5) that each employee is responsible not only for his own safety but also for that of his fellow-workers; and (6) that it is considered a violation of safety practices if any accident, no matter how slight, is not reported immediately.

Following such a definite outline of rules and regulations, the next step is to keep the employees' interest stimulated. Frequent meetings may be held where accidents are discussed and safety information exchanged.

A nutrition department in one of the large hospitals in New York City organized a safety committee of supervisors and other employees who met once a month to discuss safety measures and how to prevent accidents. One employee was selected from each unit within the department to represent his fellow employees within the unit. Ten such employees and four supervisors comprised the committee. After the first meeting the suggestions which came from the employees indicated that they were giving the whole problem of safe operation their close attention.

When an employee met with an accident, no matter how minor, he was required to write in detail just how it happened. In addition, and in the presence of the employee committee member and the supervisor in charge of the unit in question, the accident was re-enacted and suggestions were made as to how it might have been prevented. The committee member also made notes of the accident and reported it at the next meeting.

The results were most gratifying. Operating units vied with each other to keep their accidents at a minimum each month. The total number of accidents within the department decreased noticeably. The employees became aware of the possible causes of an accident and were much more careful in their operation. The outline of a safety program is only the beginning. Its purpose has been fulfilled when every employee has become so safety conscious that he is immediately aware of hazards and takes the responsibility of reporting or correcting these as soon as they appear.

PORTION CONTROL[1]

MARGARET A. BYRNS

Miss Bertha Nettleton[2] has shown us how to obtain a standard recipe with a uniform portion yield. The first step in portion control is the preparation of a standard specification for quality and weight of each food item purchased.

[1] Read before the Session on Food Cost Control, American Dietetic Association, New York, October 23, 1940.

[2] Nettleton, B. E.: Food control through recipes, J. Am. Dietet. A. 17: 24, 1941.

This is followed by studies in the preparation unit of the size of portions to be served and the actual yields from the purchases.

A manual of pertinent information is set up which includes a list of all food items served and the size of each portion, the number of portions obtained per purchase unit, and the number of portions served per standard container. This manual should be available to all persons ordering and purchasing, preparing and serving food. Portions of the manual may be posted as instruction charts for the various preparation units in the kitchen. For example, the chart for vegetable preparation would list all vegetables, the size of the portion to be served and the anticipated portion yield from the purchase unit. This chart would also indicate the standardized container used and the number of portions to be served from each container. These standard containers are useful in the issuing of all food from the preparation unit, since the containers for hot foods fit directly into the service counter or steam table.

The kitchen or preparation unit can attend to a large part of the portion control. There are certain items which are controlled by count. Some which fall into this grouping are steaks, chops, asparagus tips, flowers of broccoli, cookies and rolls. Weighing is the most accurate means of portion control. The butcher combines count and weight. He knows that he must obtain 26 six-ounce chops from a 10-pound loin of pork, and 40 four-ounce veal steaks or cutlets from a 25-pound leg of veal. Also that hamburger steaks must weigh three, four, or five ounces according to the standard for service. The baker scales his breads and cakes. In some hospitals the food is ordered and delivered by weight. For instance, Mary W. Northrop of the King County Hospital System, Seattle, prepares and issues all patient food by metric weight.

Standard slicers for bread, meat, cheese and butter are advantageous in portion control. A three-pound loaf of bread will yield 44 slices on a number 11 gauge of the bread slicer. A five-pound box of cheese will yield 80 one-ounce slices on the number 8 gauge of the U. S. Meat Slicer. Butter may be cut 40, 48 or 60 pats per pound or it may be purchased cut, so many chiplets per pound, from your dairy vendor.

In order that there may be a common language understood by all, each menu item should carry a specification as to the size of the portion and type of standard container in which it is to be issued from the preparation unit to the service unit. The checker in the kitchen who issues the food, checks the fill or the count per container and the total count of the order. In turn, careful and systematic checking of all food items received in the service unit is most essential. In this manner a double check is obtained.

There are many measures for food preparation and service. The ice cream scoop, ladle, quart dipper, gallon measure, standard spoon and standard muffin tin are all useful. The ice cream scoop is used advantageously in the preparation of items such as salads, meat balls, muffins, croquettes and fritters. Many people recommend the use of ice cream scoops of varying sizes for the uniformity of all portions in the service unit. However, this becomes a very dull and monotonous method of service if em-

ployed too frequently. Bulk patient food is often controlled by specifying the number of portions of a certain food item per quart dipper. A one-quart dipper will yield 32 portions of gravy or 8 servings of soup. Casserole dishes, baked beans, charlotte russe, deep dish pies, and baked custards may be prepared in individual containers. This limits much of the work of control in the service units, and guests, patients and personnel all like the individual service.

We face the real problem of portion control in our service units. The demonstration of service portions to employees is a most important step in controlling food portions. The dietitian must train the employee to visualize each portion as it is to be served. The counter girl should know what size scoop to use. She must be carefully shown just how a service spoonful of vegetables will look on a service plate or side dish. She must be reminded that she is to obtain 20 one-slice portions of three ounces each from a four-rib roast of beef. She must be told to use a six-ounce ladle for the spaghetti or stew. She must know the standard for cutting puddings. She must know the number of fried oysters, asparagus tips or fritters to be served per order. Standard markers may be used to assist in cutting pies and cakes. Occasionally the weighing of a portion as a check assists the employee in this "eye training". She is proud if she can consistently scale the right portion. Teach the employee the money value of food per portion. By means of this constant instruction, the dietitian impresses upon the employee the importance of accuracy in portion control in effecting economy and satisfying the guest.

Demonstration and instruction in the service of standard portions should be followed by a careful check on all portions as served. Hospitals are just beginning to use the control methods which business firms have found to be a necessity for efficient operation.

A simple method of checking portions as food is being served is the plate count. This may be used where the non-selective table d'hôte menu is served. All items of food not served on the plate should be deducted from the count and the second servings should be added to the count.

Another method is to have the checker record a limited number of items, using the adding or checking machine. School cafeterias, employee cafeterias, and restaurants have found it advisable to have one person responsible for checking. This check may be made directly from the tray, or if there is waitress service, from the guest's itemized check. The use of a "Multi-Counter" is a new method which has been devised. The Multi-Counter is a bank of twelve small adding machines. This counter may be set up in units of one, three or five banks, the five banks checking sixty items at one time. It is possible to divide the checking. A number of the portions served may be counted successfully in units or portions by the employees at the service counter. Then only the remaining bulk food items need be checked on a pad or Multi-Counter by the food checker.

A food service report gives a written record of the details of your food control. This report includes the following: the items served, size of portion, number of

portions ordered, the cost per portion, the number of portions served and the number of portions left over. In a commercial unit it is essential to include the sales price per item, the income realized on the item, and the resulting profit or loss. From this record the food cost percentage may be obtained.

As indicated in the food service report, no portion control is complete without checking the portions ordered with those received, served and left at the close of the meal. This analysis will help to answer the following questions: Did you obtain your standard portion? If not, were the portions too large or too small according to the standard? What were the left-overs today, and why—was it due to the weather, was the quality of the food not up to standard, or did you over-order? Also, did you analyze your plate waste?

In conclusion I would list the advantages of portion control as follows: The system promotes guest satisfaction and assists the institution in giving the guest the greatest value for his dollar. It eliminates excess food on hand, assures fresh food served daily, decreases left-overs in the kitchen, diminishes waste in the garbage can, and enables the food purchaser to buy the best quality of food through an efficient system of ordering and control.

Our doctrine of Democracy is a product of two thousand years of Christianity: a system of ethics and philosophy which exalted the importance of the individual man, giving him personality, dignity, and hope. To make us victorious, we must find a passion for personal freedom within the framework of a society, and a passionate faith . . . the magic of emotion. . . . In our country of America the mystical emotional symbol is "Freedom." But Freedom is no isolated abstraction, it is no natural estate, it is the legacy to us of a thousand years of battling men; if we would keep it, we must battle as they did, and fail not . . . we must renew the faith; gain again the flaming emotion of Pitt, Cromwell, Washington, Lincoln and the great founders of this Republic. We must fire political doctrine with belief, with the magic of passion, for our own sake and for the decency of mankind. We must do dauntlessly because we have faith fully. . . . our fathers . . . had their standards and codes, and deviation from them carried immediate penalty. In our days we have allowed ourselves, and we are constantly being encouraged to become so pliable, so flexible, so "relative" to all things, in a current phrase so "broadminded", that we are in danger of having no ethic, no vision, no hope. . . . But we may still believe in ourselves—for there is a hard virtue somewhere still within us.—*Kennedy, Foster, M.D. In an address before the Annual Meeting of the American Dietetic Association, New York, October 24, 1940.*

BOOK REVIEWS

Public Health Administration in the United States. Second edition. By Wilson G. Smillie, M.D., Dr. P.H., New York: The Macmillan Company, 1940, pp. 553. Price $3.75.

The author is a leading authority in this country on the above subject and his views are accepted as authoritative and progressive. Now that preventive medicine has become such an integral part of all medical thought, it demands a "dynamic, not static" concept, an alertness to changing emphases and points of view as influenced by the rapid advances in our knowledge concerning the promotion of health and the prevention of disease.

Dr. Smillie was one of the first to give due emphasis to the import of nutrition in individual and community welfare and his chapter on nutrition will interest and encourage all dietitians and nutritionists. The chapter on sanitation and sanitary inspection, too, will prove of interest to directors of food services. Dietitians in schools and other institutions for children may read with profit the section on administrative control of communicable diseases which includes those so common in childhood.

Nutritionists in public health work will be especially interested in the section on organization of public health programs, for this permits a broad understanding of the vast and intricate administrative details concerned with such programs.

Dr. Smillie has assembled a vast amount of information within 540 pages. His forceful and direct style leaves no uncertainty as to his meaning. Therefore the book will be invaluable as a sound and readily available source of information for physicians, nurses, technicians and dietitians.

Vitamins: What They Are and How They Can Benefit You. By Henry Borsook. New York: The Viking Press, 1940, pp. 193. Price $2.

There is no doubt that our "nutrition conscious" public today is "vitamin curious". The topic of vitamins is almost as good as the weather for starting a conversation, and far more stimulating. Dr. Borsook, in his timely and simple exposition—his "Cook's tour of the vitamins"—offers the interested layman a few hours of both profitable and enjoyable reading on this subject.

Scientific discoveries must be so interpreted that the laity may derive full benefit from such discoveries. Scientists, on the whole, are too conservative in their statements of fact and theory to make new discoveries sufficiently dramatic to the average reader. When an enthusiastic scientist succeeds in doing so, he runs the danger of making too broad statements from which misleading implications may be drawn. Quite frequently, therefore, criticism follows from professional colleagues. Such may be the fate of the author of this book. In his attempt to stimulate interest and dramatize the vital importance of vitamins in everyday life he may have stressed some points unduly. The unequal emphasis on certain vitamins or on the contributions made by particular foods may leave the uninformed reader with a slightly erroneous impression of their relative importance. On the whole, however, Dr. Borsook has succeeded in telling an interesting, scientific story which should stimulate many of his readers to seek "more abundant health" by increasing their vitamin intake.

The author cites historical evidence of changing dietary habits which have resulted in beneficial effects upon health, growth and longevity. He deplores, however, the modern tendency toward the use of refined foods deficient in vitamins, a habit which may contribute to much chronic ill health. At the same time he warns his readers that vitamins are not cure-alls.

Authorities in general may not agree on exact figures for human vitamin requirements, but Dr. Borsook has given relatively more emphasis than most to thiamin and ascorbic acid. He gives good evidence for his contention that the average American needs much more vitamin B_1 (thiamin) than he now gets. The problem is: what practical means are there of attaining his suggested adult standard of 5–7 I.U. thiamin per pound of body weight? Few will choose to eat oatmeal, whole wheat bread, peanut butter and beans daily, and if not, they will find it difficult to obtain the suggested amount of this factor from natural foods. The proposed reinforcement of flour and possibly other foods with extra thiamin is an alternative strongly advocated by the author. It is encouraging to note

the emphasis on adult vitamin requirements as well as the needs of children.

Unfortunate are the author's discussions of "vitamin F" and vitamin E. The former nomenclature has never been accepted for the unsaturated fatty acids and might better be dropped. The lay reader, unaware of the earlier incidents in this connection, will not understand the significance of the quotation marks. The function of vitamin E is well established experimentally but the limited amount of clinical evidence concerning vitamin E in human nutrition makes it seem somewhat premature to call it the "miscarriage" vitamin.

The author is obviously enthusiastic and sincere in his desire to improve the nation's health through better food habits. His attempt to crusade for better nutrition through a greater appreciation of the importance of vitamins is creditably motivated. The book will appeal to the non-scientific reader and should answer many of the questions frequently asked about vitamins.—HELEN S. MITCHELL, PH.D., *Massachusetts State College, Amherst.*

Vitamin Therapy in General Practice. By Edgar S. Gordon, M.D., M.A., and Elmer L. Sevringhaus, M.D., F.A.C.P. Chicago: The Year Book Publishers, Inc., 1940, pp. 258. Price $2.75.

In view of the potentialities of vitamin therapy and the need to educate the majority of clinicians in this new field of medical therapy, this book is most timely, for it gives definite reasons for specific diet therapy prescriptions. In writing the book the authors, too, have wisely sought the assistance of such authorities as Dr. C. A. Elvehjem and Dr. Helen Parsons and her staff.

In their introductory chapters the authors orientate their readers in the proper attitude toward vitamin therapy, clearly differentiating vitamins from hormones, emphasizing the complexity of the usual deficiency state, and urging the need of objective means of determining deficiencies and treating these on a quantitative basis. The several vitamin substances are then discussed in turn, with practical suggestions for the therapeutic use of each and the mode of administration.

Since the whole story of nutrition concerns more than the vitamins, the authors have added chapters on the minerals, protein, fuel foods, carbohydrate, and fat. Others on weight control including reducing diets, dental problems in nutrition, and the economic side of clinical nutrition, make this book perhaps the most well-rounded, practical and up-to-date reference on vitamin and diet therapy available today. The appendix lists the various types of commercial vitamin preparations, presents methods of assay for deficiency states, and vitamin value tables.

Foods of our Forefathers. Illustrated. By Gertrude I. Thomas, Assistant Professor of Dietetics, University of Minnesota. Philadelphia: F. A. Davis Company, 1941, pp. 228. Price $2.50.

Miss Thomas discusses the foods and food customs of our forefathers, from the licensing of a colony of Englishmen in Jamestown, Virginia, in 1606, to the establishing of the middle colonies in 1614 and those of New England in 1620 or thereabouts. She tells how and why the food customs of the homeland—of England, Scotland, the Netherlands, France, Sweden, Germany and Denmark—have carried over to our American cuisine of today; how the native food habits were modified and adapted to the foods indigenous to the New World. Some of these New World foods which the hardy settlers finally accustomed themselves to eat, notably the white potato first recorded as eaten in 1650, have become internationally used foods. The native corn, however, really saved the lives of these early settlers.

Collectors of old china, glass and culinary items will be interested in the chapters on Virginia, where the fine flower of English aristocracy continued and was evidenced in the table appointments of the well-to-do. Miss Thomas tells how the famed southern spoon bread was evolved from the earlier mixture prepared by the Indians.

Whereas the best cultural traditions of England permeated the Virginias, Maryland and Georgia, those of France and Spain influenced Louisiana and the Southwest, and that of Holland in New Amsterdam. Today these traditions still carry on in the South but are almost obliterated in the New Amsterdam of today.

Miss Thomas tells of another distinctive culture, that of the peace-loving farmers of the German Rhine valley who settled in Pennsylvania in 1683, purchased land at ten cents an acre and ever since have maintained their individuality and comfortable warmth of character in their foods and houses.

Apparently both climate and religion made life in New England stern—"no place for the lazy or feeble." Here food was thriftily stored, spices and pickling extensively used in preserving, and according to Miss Thomas, table forks appeared for the first time in America.

But it is impossible to indicate within the space of a review all the many absorbing features of this book. It will be heartily welcomed by all students of Americana and collectors of interesting recipes.

The Community Nutritionist

The clinic services for the correction of nutritional defects have long since become an accepted community responsibility. Hospital outpatient departments and dispensaries have organized special diet instruction clinics for special types of patients. Prenatal, well baby, and child health clinics have given particular attention to problems of nutritional deficiency. The community nutritionist may be of great value to the community by aiding in the organization of such services, if they do not already exist, and may assist effectively in perfection of the technique of those nutrition clinic services that have already been established.—*Smillie, W. G.: Public Health Administration in the United States, New York: The Macmillan Company, 1940.*

CURRENT LITERATURE

American Journal of Digestive Diseases

Vol. 7, December 1940

* Vitamin K deficiency in a case of gall-bladder disease without clinical jaundice or hepatitis. G. Cheney.—p. 521.

VITAMIN K DEFICIENCY. A patient with cholecystitis with a prolonged plasma coagulation time indicative of vitamin K deficiency was successfully treated with this vitamin parenterally. None of the usual explanations for vitamin K deficiency seemed tenable.

American Journal of Diseases of Children

Vol. 60, December 1940

* Relation of dental caries in rural children to sex, age and environment. B. R. East and H. Kaiser.—p. 1289.
* Minimal nitrogen requirements of children with the nephrotic syndrome: Effect of the administration of a growth-promoting anterior pituitary extract. L. E. Farr.—p. 1324.

DENTAL CARIES. An important relation exists between the incidence of caries and the amount of sunshine and latitude. Winter temperature is apparently of only slight importance in the incidence of caries in all boys and in girls aged 9 to 11 years. In girls aged 6 to 8 and 12 to 14 this climatic factor has an important correlation with the incidence of dental caries. Close attention should be given to vitamin D in the prevention and control of dental caries.

NEPHROTIC SYNDROME. Six children aged 2½ to 7 years with the nephrotic syndrome were observed in a study of nitrogen balance for 8 weeks. To avoid negative nitrogen balances the daily ration must contain more than 2.5 gm. protein per kg. ideal body weight. The assimilation of nitrogen was little affected by increases in the caloric intake. The administration of a growth-promoting extract of the anterior lobe of the pituitary had no effect on the nitrogen assimilation of 3 nephrotic children.

American Journal of the Medical Sciences

Vol. 200, December 1940

* Clinical studies of experimental human vitamin B complex deficiency. K. O. Elsom, F. H. Lewy and G. W. Heublein.—p. 757.
* The treatment of amyotrophic lateral sclerosis with vitamin E. I. S. Wechsler.—p. 765.

VITAMIN B COMPLEX DEFICIENCY. The clinical manifestations of vitamin B deficiency were studied in an otherwise healthy individual who consumed a constant daily amount of a standard diet adequate except for the B complex. These manifestations responded in part to thiamin, were influenced very little by the addition of riboflavin and were relieved by the administration of brewers' yeast. Pulse rate increased and gastro-intestinal symptoms developed. Mental symptoms were prominent, responding somewhat to thiamin, but were not relieved entirely until yeast was added to the diet. A mild macrocytic anemia and edema developed. These were relieved only after the administration of yeast.

AMYOTROPHIC LATERAL SCLEROSIS. Twenty cases of amyotrophic lateral sclerosis were treated with vitamin E. Privation of this vitamin plays a specific role in the causation of some types of amyotrophic lateral sclerosis, but other factors also operate. Synthetic vitamin E and natural vitamin E act specifically in some cases and bring about varying degrees of improvement in inverse ratio to the age and duration of the disease process. Dietary deficiency, gastro-intestinal and hepatic disease, possibly the absence of other vitamins, may play additional causative roles.

Archives of Internal Medicine

Vol. 66, December 1940

* Acacia in the treatment of the nephrotic syndrome. A. Goudsmit and M. W. Binger.—p. 1252.

ACACIA IN NEPHROTIC SYNDROME. Acacia can be incorporated advantageously into the treatment of the nephrotic type of edema. Other therapeutic features include a salt-free high protein diet, the restriction of fluids and the use of diuretic salts.

British Medical Journal

No. 4171, December 14, 1940

* Interim report on dyspepsia in the army. R. T. Payne and C. Newman.—p. 4171.
* Lactation and breast feeding. W. Hunter.—p. 827.

No. 4172, December 21, 1940

* Polycythemia and vitamin C. J. Deny.—p. 864.

No. 4173, December 28, 1940

* Nutritional problems of war and peace.—p. 913.

DYSPEPSIA IN ARMY. Early in the war it was noticed that indigestion appeared to present the biggest medical problem among the sick invalided back to the United Kingdom from the British Expeditionary Force in France. Practically all the ulcer patients had lived for years on a relatively strict diet, and the breakdown appeared to be due to Army food, which is too heavy for those prone to ulcers. The heavy diet caused a higher incidence of vomiting. The incidence of peptic ulceration in the Army is likely to increase, because conscription is beginning to involve the age groups in which ulcers are common.

LACTATION AND BREAST FEEDING. Breast feeding offers the child the best chances of survival and good health. Breast development is brought about by the action of oestrin and progestin. Secretion of milk follows withdrawal of the ovarian hormones, the secretion of prolactin, and breast stimulation by the sucking reflex. Smoking is prohibited and an adequate fluid intake is given. Vitamin E and prolactin may be administered with advantage.

POLYCYTHEMIA AND VITAMIN C. Vitamin C alone had little effect on polycythemia, but in conjunction with sodium bicarbonate caused an improvement in the general health and a marked fall in the red cell count.

NUTRITIONAL PROBLEMS. It is impossible to formulate any kind of adequate diet unless it is based on one pint of milk per day. Margarine is equal to winter butter in vitamin content. Wholemeal bread is an important source of vitamin B_1, riboflavin, and nicotinic acid and contains nearly $2\frac{1}{2}$ times as much iron as white bread. It is better to cook potatoes in the skin. The skin of fruits is often the richest source of nutrients, but in some vegetables it is just a protective cover.

Bulletin of the Johns Hopkins Hospital

Vol. 67, December 1940

* The relation of diet to the occurrence of ataxia and degeneration in the nervous system of pigs. M. M. Wintrobe, J. L. Miller and H. Lisco.—p. 377.

ATAXIA AND DIET. In 44 pigs raised on a basal diet containing casein, sugar, lard, a mineral mixture, cod liver oil, ascorbic acid and varying amounts of yeast, a disturbed gait and extensive lesions in the nervous system developed when the yeast content of the diet was reduced to low level or omitted entirely, and thiamin, riboflavin or nicotinic acid were furnished separately or in various combinations. None of the 6 pigs fed whole desiccated liver developed changes referable to the nervous system.

Canadian Medical Association Journal

Vol. 43, December 1940

* The diagnosis and treatment of hyperthyroidism. J. H. Means.—p. 509.
* Diets in dyspepsia. J. Daly.—p. 513.
* The value of elimination diets in the treatment of infantile eczema. A. R. Birt.—p. 520.

HYPERTHYROIDISM. Methods of treating hyperthyroidism can be divided into those aimed at subduing the hyperfunctioning thyroid gland and those aimed at correcting the mischief caused by such hyperfunctioning, including general malnutrition, avitaminosis and lack of minerals such as iron.

DYSPEPSIA. Dyspepsia is an undue awareness of the processes of digestion. Dietary restrictions in dyspepsia have been carried too far and cannot be justified by the clinical results, functional disturbances of the gastro-intestinal tract being more often aggravated than relieved by such restrictions. The need of both a healthy body and a healthy mind is suggested and a week's menus included.

INFANTILE ECZEMA. In 198 cases of infantile eczema investigated at Children's Hospital, Winnipeg, egg was by far the commonest offender. It was a causative factor in 20 instances; tomato, 11 times; and in descending order, orange, milk, fish, oatmeal, and cod liver oil. Wheat, celery, lettuce, honey, spinach, peas, beans and chocolate were involved in individual cases.

Canadian Public Health Journal

Vol. 31, December 1940

* Some observations on Canadian nutrition. E. W. McHenry.—p. 584.

CANADIAN NUTRITION. Canadian foods, with the exception of vitamin D, will supply a diet

adequate in energy requirements, protein, minerals and vitamins. A survey of 100 families having incomes below $1000 per year showed that 76.5% of the calorie standard, 77% of the protein, 69% of the calcium and 62% of the iron was actually received. A group of 80 families having annual incomes between $1500 and $2000 received adequate supplies of food. Raising the nutritional status of civilians as well as attention to the Army rations is indicated.

Food Research

Vol. 5, November-December 1940

Comments on the microbiology of spoilage in canned foods. E. J. Cameron and J. R. Esty.—p. 549.
Composition of fireweed honey. J. A. Ellegood and L. Fischer.—p. 559.
A study of starch from different varieties and types of corn. L. P. Tanner and D. T. Englis.—p. 563.
The heme pigments of cured meats. IV. Role of sugars in color of cured meats. D. A. Greenwood, W. L. Lewis, W. M. Urbain, and L. B. Jensen.—p. 625.

Hygeia

Vol. 18, December 1940

Feeding the army. Z. H. Garfield.—p. 1058.
The WPA school lunch. F. Kerr.—p. 1074.
Chocolate and chocolate products.—p. 1084.
* Much taboo about nothing. C. T. Wright.—p. 1088.
Sugar babies. E. Coakley.—p. 1106.

VEGETARIANISM. A vegetarian of 20 years' duration tells of her experiences and records her reactions to the meat-free régime. Gradually she goes back to a normal diet and finds the commonplace menu full of exploration and discovery.

Journal of the American Dental Association

Vol. 27, December 1940

Studies in tooth development: The growth pattern of human teeth. I. Schour and M. Massler.—p. 1918.

Journal of the American Medical Association

Vol. 115, December 7, 1940

* Peripheral neuropathy due to vitamin B_1 deficiency in diabetes mellitus. H. D. Fein, E. P. Ralli and N. Jolliffe.—p. 1973.
* Relationship of anterior lobe of the hypophysis to other endocrine glands. P. E. Smith.—p. 1991.
* Selenium and dietary protein. Editorial.—p. 2001.

Vol. 115, December 14, 1940

* The universality of diabetes. E. P. Joslin.—p. 1033.
Glandular physiology and therapy. Corticotropic, thyrotropic and parathyrotropic factors. J. B. Collip.—p. 2073.

Vol. 115, December 21, 1940

* The anterior lobe of the hypophysis in intermediary metabolism. D. L. Thomson.—p. 2169.
* Body weight and cancer incidence. Current comment.—p. 2183.

Vol. 115, December 28, 1940

* Lactogenic and mammogenic hormones. O. Riddle.—p. 2276.
* The optimum population for the United States. Editorial.—p. 2282.

PERIPHERAL NEUROPATHY IN DIABETES. Of 422 ambulant diabetic patients studied, 9 had a symmetrical peripheral neuropathy characteristic of vitamin B_1 deficiency. Daily ingestion of 10 mg. thiamin hydrochloride resulted in cure of 8 subjects and improvements in the ninth.

GLANDULAR PHYSIOLOGY. The 5 hormones or principles issuing from the anterior lobe of the hypophysis are: (1) the growth principle; (2) the gonadotropic hormone; (3) the thyrotropic hormone; (4) the corticotropic hormone, and (5) the lactogenic hormone.

SELENIUM. Wheat, corn and barley grown on soils in certain areas of South Dakota, Nebraska and Wyoming contain selenium, a chemical cousin of sulfur. An amount of selenium which will cause extensive tissue damage to animals on a diet low in protein and high in carbohydrate will do little or no harm to animals maintained on diets high in protein and low in carbohydrate. The toxicity of selenium in food seems to be determined within certain limits by the ratio of selenium to protein in the diet rather than by the level of selenium.

DIABETIC SURVEY. A diabetic survey in Arizona supports the thesis that diabetes is universal and conforms to the rule that the incidence of diabetes is highest where (1) the average age is greatest, (2) women predominate, (3) obesity is most frequent, (4) the proportion of Jews is greatest, (5) medical supervision is closest and (6) deaths are most accurately reported.

ANTERIOR LOBE OF HYPOPHYSIS. The role of the anterior lobe of the pituitary in intermediary metabolism is very difficult and complex. It is impossible to tell how widely the repercus-

sions of any experimental interference may spread through the endocrine system. Great variations in behavior between species and between individuals in any one species are the rule. None of the anterior pituitary principles has yet been obtained in a state of indubitable purity.

CANCER INCIDENCE AND BODY WEIGHT. Many external factors such as climate, exposure to sunlight and geographic location affect the incidence of cancer. Experimental and statistical evidence on both animals and man shows that individuals of average weight are not so likely to develop cancer as those who are overweight.

LACTOGEN AND MAMMOGENS. Both growth and secretion are controlled mainly by hormones. The anterior lobe of the pituitary exercises a direct control over milk secretion; it exercises an indirect control and perhaps a direct control over the development and growth of the mammary glands. Hormones of the ovary play a part in the growth of the mammary gland.

POPULATION OF UNITED STATES. The slowing of population growth now manifest in the United States is almost certainly a desirable feature in maintaining the superior economic opportunities which place this country in a relatively favorable position as compared with the crowded countries of Europe. There is no need to fear either a lack of available workers or a lack of potential soldiers to meet any threat.

Journal of Biological Chemistry

Vol. 136, December 1940

* Comparative metabolism of glucose and fructose in the rat. N. R. Blatherwick, P. J. Bradshaw, M. E. Ewing and S. D. Sawyer.—p. 615.

* The activation of cocarboxylase by thiamine. M. A. Lipton and C. A. Elvehjem.—p. 637.

* Studies on pituitary lactogenic hormone. IV. Tyrosine and tryptophane content. C. H. Li, W. R. Lyons and H. M. Evans.—p. 709.

* Nicotinic acid derivatives in human urine and their determination. W. A. Perlzweig, E. D. Levy and H. P. Sarett.—p. 729.

GLUCOSE AND FRUCTOSE METABOLISM. The administration of fructose to rats by stomach tube resulted in more than a 50% increase in the lactic acid content of the liver and muscles, over that obtained with glucose. This intermediary production of lactic acid from fructose is added evidence that lactic acid is largely responsible for the higher respiratory quotients observed after the ingestion of this sugar.

COCARBOXYLASE ACTIVATION. The activation of cocarboxylase by thiamin has been shown to depend upon the kind of yeast employed in the test. Bakers' yeast shows this phenomenon strongly; brewers' yeast exhibits it only to a minor degree. The mechanism of thiamin activation of cocarboxylase has been investigated.

LACTOGENIC HORMONE. Sheep and beef pituitary lactogenic hormone contains about the same amount of tryptophane but the tyrosine content of beef hormone is higher. Lactogenic hormone exhibits a species specificity.

NICOTINIC ACID IN URINE. Five normal human adults on an adequate diet excreted daily 1 to 3 mg. nicotinic acid derivatives exclusive of trigonelline. On a diet free of coffee they excreted 20 to 29 mg. trigonelline per day, and up to 200 mg. per day when ingesting coffee. After the ingestion of 100 to 200 mg. nicotinic acid, four of the subjects excreted 2.5 to 19.4 mg. nicotinic acid derivatives, mostly as nicotinuric acid.

Journal of Nutrition

Vol. 20, December 1940

* Multiple deficiencies in the modified Goldberger diet as demonstrated with chicks. H. A. Waisman and C. A. Elvehjem.—p. 519.

* A quantitative study of vitamins in the rumen contents of sheep and cows fed vitamin-low diets. II. Vitamin B_6. L. W. McElroy and H. Goss.—p. 541.

* Studies on the metabolism of nicotinic acid in the sheep. P. B. Pearson, A. H. Winegar and H. Schmidt.—p. 551.

Pantothenic acid requirement of the rat. K. Unna.—p. 565.

* The effect of vitamins A and C on experimental hyperthyroidism. I. J. Belasco and J. R. Murlin.—p. 577.

* The influence of exercise on the growing rat in the presence and absence of vitamin B_1. N. B. Guerrant and R. A. Dutcher.—p. 589.

Studies on a dermatitis in chicks distinct from pantothenic acid deficiency. D. M. Hegsted, J. J. Oleson, R. C. Mills, C. A. Elvehjem and E. B. Hart.—p. 599.

* Studies on the thiamin requirement of young swine. C. Van Etten, N. R. Ellis and L. L. Madsen.—p. 607.

Anti-grey hair vitamin deficiency in the silver fox. A. F. Morgan and H. D. Simms.—p. 627.

DEFICIENCIES IN GOLDBERGER DIET. The limitations of the modified Goldberger ration

have been determined. Thiamin exerts no effect on growth; riboflavin gives definite growth responses; nicotinic acid gives variable responses in growth; and vitamin B_6 did not increase growth over the basal. The basal ration was low in pantothenic acid and factor U. Additional factors other than the known members of the vitamin B complex are necessary for optimal growth of chicks fed the modified Goldberger diet.

VITAMIN B_6 IN RUMEN CONTENTS. Milk from cows fed a ration deficient in vitamin B_6 contained as much vitamin B_6 as milk from cows fed a normal ration.

NICOTINIC ACID METABOLISM IN SHEEP. There is no essential difference in the nicotinic acid level of the blood of lambs fed a diet low in nicotinic acid and those fed a stock diet. Lambs restricted to the deficient diet for several months continue to excrete in their urine approximately as much nicotinic acid as those on a stock diet. Fifty hours after the ingestion of a large dose of nicotinic acid the amount in the liver was materially augmented. Following the ingestion of a massive dose the nicotinic acid level of the blood markedly increases.

VITAMINS IN HYPERTHYROIDISM. Vitamin A and ascorbic acid reduced the hypermetabolism associated with hyperthyroidism in rats to some extent. Both ascorbic acid and vitamin A increased the respiratory rates of liver and of kidney cortical tissue. Ascorbic acid increased thyroid tissue respiration, while vitamin A depressed it. The depressed thyroid respiration was not alleviated either by vitamin A or ascorbic acid.

EXERCISE AND VITAMIN B_1 REQUIREMENT. Vitamin B_1 requirement of rats is increased by physical exercise. In animals receiving no vitamin B_1, increased exercise resulted in less food consumption, less growth, early development of paralytic symptoms and the elimination of a greater number of fecal particles. Definite nervous instability resulting from vitamin B_1 deficiency was indicated by the increased tendency of the animals to exercise.

THIAMIN REQUIREMENT OF SWINE. Pigs on sodium sulfite-sulfur dioxide treated diets without added thiamin consistently developed symptoms due to a specific lack of thiamin, such as almost complete refusal of food with occasional vomiting, extreme emaciation, and marked lowering of body temperature. When thiamin was not added, death usually occurred within 5 weeks. When enough was added, an approximately normal rate of growth was maintained with alleviation of all deficiency symptoms.

Journal of Pediatrics

Vol. 17, December 1940

* The significance of protein metabolism in the nephrotic child. L. E. Farr.—p. 734.
* Renal glycosuria. S. G. Babson.—p. 781.

PROTEIN METABOLISM IN NEPHROTIC CHILD. Maximum assimilation of dietary protein in the nephrotic child is not promoted by maximum intake. Nitrogen assimilation reaches a maximum on a diet furnishing approximately 3 gm. protein per kg. ideal body weight. Variations in the fat and carbohydrate content of isocaloric diets are without effect on nitrogen assimilation. Efforts to control the malnutrition and complications of nephrotic patients may be achieved by restoring the protein metabolism to a more normal state.

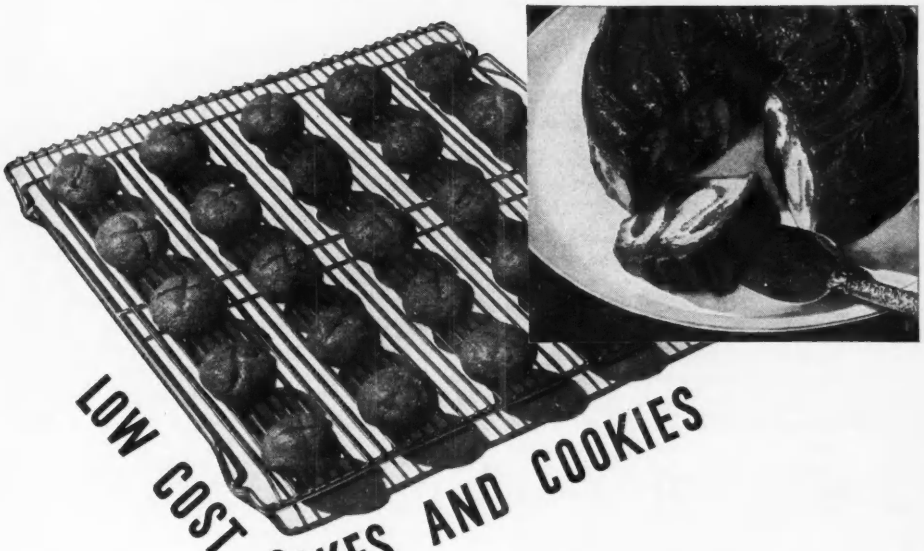
RENAL GLYCOSURIA. In an American family, renal glycosuria was transmitted through 3 generations as a dominant character. The diet for renal glycosuria should not be restricted but should contain sufficient additional carbohydrate to offset the loss of sugar in the urine. This will prevent ketosis and maintain an adequate glycogen reserve.

Kentucky Medical Journal

Vol. 38, December 1940

* Vitamins, their use in children. T. J. Marshall.—p. 579.

VITAMINS FOR CHILDREN. The recent achievements in the science of nutrition are among the most significant in modern medical progress. The baby and young child are less likely than the older child or adult to receive sufficient vitamins in the diet. The precise vitamin requirement varies with each child even under the same conditions, and is increased by rapid growth, physical exercise, infections, digestive disturbances and environmental conditions.



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Public Health Nursing

Vol. 32, December 1940

* Rheumatic heart disease in children. M. A. Goldsmith.—p. 711.
* The school child's teeth. F. C. Cady and W. J. Pelton.—p. 732.

RHEUMATIC HEART DISEASE IN CHILDREN. Poor housing and concomitant social conditions predispose to rheumatic fever in children. Crowded living and sleeping quarters, poor ventilation, lack of sunshine, dampness, poor hygiene, and poorly balanced diets with insufficient quantities of food to ensure proper growth and development are noted in social histories of those affected. Nearly 75% of all children having rheumatic fever develop some form of heart complication. Children with rheumatic fever should have absolute rest, a strict regimen during convalescence and follow-up supervision to prevent recurrence.

SCHOOL CHILD'S TEETH. An effective dental program for the school child is one which embodies a remedial program to prevent the accumulation of untreated defects, a tax-paid treatment program, a continuous health education program conducted by the classroom teacher and active participation in the dental program by community groups.

Science

Vol. 92, December 13, 1940

* Solar rays and vitamin C. E. F. Kohman and D. R. Porter.—p. 561.

Inefficacy of pantothenic acid against the graying of fur. R. R. Williams.—p. 561.

Vol. 92, December 20, 1940

Two factors of possible importance in relation to the etiology and treatment of dental caries and other dental diseases. R. M. Stephan.—p. 579.

Vol. 92, December 27, 1940

* A further note on the identity of vitamin H with biotin. P. Gyorgy, C. S. Rose, K. Hofman, D. B. Melville and V. DuVigneaud.—p. 609.

SOLAR RAYS AND VITAMIN C. A striking relationship exists between solar irradiation and the ascorbic acid content in plants. There is a rapid loss of ascorbic acid when tomato plants are kept in the laboratory overnight, and a rapid recovery when the plants are exposed to direct sunlight. Evidence of a positive correlation between ascorbic acid and sugar in the ripe tomato was found.

VITAMIN H. Crystalline biotin ester possesses such an extremely potent vitamin H activity as to leave no doubt that vitamin H and biotin are identical.

Scientific Monthly

Vol. 51, December 1940

* Food supply of continental Europe. A. E. Taylor.—p. 558.

FOOD SUPPLY OF CONTINENTAL EUROPE. With the continuation of blockade in Europe, a short bread-grain crop and disturbing difficulties in transportation between states and within states, the bread supply is sure to be reduced. The fat and oil supply is the Achilles' heel of the European food supply. A real fat shortage was anticipated after the first of the year. Famine has always existed in Europe in spots but war means it will cover wider areas and involve larger numbers.

INSTITUTION MANAGEMENT

Consumers' Guide

Vol. 7, November 1940

* Penny milk.—p. 2.
* Broadcasting food facts.—p. 3.
* Milk glossary for consumers, part IV.—p. 14.

PENNY MILK. The cooperation of government milk producers and distributors enabled school children to purchase one-half pint of milk each day for a penny. After the advent of "penny milk" in Chicago schools, from five to twelve times more milk was purchased by the children at this new low price. New York's experiment with "penny milk" was to run for 3 months—until the end of 1940. The Department of Agriculture will use records from Chicago and New York to determine if "penny milk" will take its place along with the Stamp Plan and "nickel a quart milk" in bringing to the needy foods necessary for nutritional defense. The difference between the penny the children pay and the total received by the distributors comes from funds appropriated by Congress for removal of surplus agricultural commodities. The Secretary of Agriculture has described the

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MILK. Statistics show that the average consumption of whole milk in the United States for 1936 was about 185 quarts which is from 10–20% less than dietitians consider desirable. Although there has been much debate about the relative advantages of glass and paper containers no decision has been reached. The state legislatures in 20 states have created control boards: "under the laws creating these agencies they are empowered to fix the price paid farmers for their milk, to regulate relations between farmers and distributors, and, in all except one state, to fix the price charged consumers for milk. Cream is the sweet fatty liquid or semi-liquid separated from cow's milk which must contain at least 18% butter fat. The meaning of the word dairy depends on the part of the country you come from: *i.e.* a place where milk is kept and converted into butter and cheese; the department of a farm where milk, butter, and cheese are produced; a dairy farm or the cows on a dairy farm; an establishment for the sale or distribution of milk or milk products.

Food Industries

Vol. 13, January 1941

Food wanted: 6,000,000 tons. E. O. Heyl.—p. 37.
Head G-man on anti-sabotage. J. E. Hoover.—p. 39.
* Foods that aided blitzkrieg.—p. 43.
* Blocked sea lanes threaten spice supplies. A. Chaffee.—p. 44.
Make 14 trucks do work of 18.—p. 46.
* Factors to consider when size-grading granular materials. R. Kohn.—p. 48.
Quality control of operations in the beverage plant. S. S. Epstein and M. Kirsch.—p. 52.
* Pectin as aid in freezing fruits. G. L. Baker.—p. 55.
* Progress in processing salt stock. W. G. Wormley.—p. 58.
* Hints and hurdles.—p. 59.
* Army to buy food in small tin cans.—p. 65.
* Butter institute works on quality.—p. 65.
* Army buying falls into step with food industry practice.—p. 66.
* Need for a fortified flour cited at meeting of millers.—p. 68.
* Problems discussed at chocolate hearing.—p. 70.
* O-phenylphenol for citrus fruit wrappers.—p. 92.
* Perishables stabilized by homogenization.—p. 92.
Simple way to get red wines.—p. 92.
* Spoilage of acid canned fruit.—p. 93.
* Enzyme control in cereal products.—p. 94.
* Swiss arguments for whole-grain bread.—p. 94.
* Plasticity of chocolate melts.—p. 94.
* Removing flavors from cream.—p. 94.
* Better salting of blue cheese.—p. 95.
* Effects of temperature on color in Canadian bacon.—p. 95.
* Dill pickle fermentation.—p. 96.

ARMY FOODS. Food technology has contributed much to Nazi military might. An *ersatz* known as "Edelsoja" is a soy bean flour with a high protein content of 40–45%, and fat and carbohydrates. This flour is added to soups, bread, pastry and macaroni. To this soy bean product the German High Command attributes a great deal of the success of the army rations, for it helps supply the soldiers with a balanced diet, and the saving in bulk tends to simplify the problems of packing and transporting. Another meat substitute is "Bratlings", derived from raw materials such as vegetable and animal albumin, and added to cabbage rolls, meat balls, or chopped meat dishes. Because the German army has been confronted with the possibilities of a tin shortage, they have converted foods into powder form. A Bratling powder consists of soy bean, grain and milk albumins spiced with herbs. The need of vegetables, vitamins, and other necessary constituents for a balanced diet has been met by similar concentrated forms of nourishment. Sausages are stretched "by addition of artificially germinated soy beans and rye grains; spinach or cabbage juice made into a paste and served to troops in the field as noodles; dehydrated cabbage, carrots and spinach are also compressed into brick form and issued as dried vegetables; sauerkraut, dried and compressed into cubes, is used in every kitchen. American quick freezing methods are extensively used to protect meat in transport. The meat is first cooked and then compressed before it is frozen gradually, so that a saving of

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* The Retention of Calcium and Phosphorus by Pre-school Children. Journal Nutrition 19: 401-414 (Apr.), 1940.

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400% in space has been gained; products will also stand journeys of 4 to 5 days with refrigeration. "Pemmikan" prepared from dried game and cranberries is issued to tank, fortress, mountain and air troops. "Pemmikan-Landjaegar" of smoked meat, bacon, soy bean flour, dried fruits, whey, tomato pulp, yeast, green peppers, cranberries and lecithen, is another concentrated food used for detached troops.

SPICE SUPPLY. "Scarcity of cargo space and restrictions on shipping caused by the war, seriously threaten the supplies of spices upon which American food industries depend." Most spices grown in the Old World cannot be exactly duplicated in South America, as some have hoped. One authority considers the present situation far more serious than that at the time of the World War of 1914-18. Except for black and white pepper, there is little spice available to supplement the small stock on hand. New York has become the world's pepper mart, carrying large stocks for redistribution. Includes a spice map published by Durkee Famous Foods, Elmhurst, New York.

GRANULAR MATERIALS. Discusses factors to be considered when size-grading materials, and the use of sifters, sieves, and screens in separation of such materials as grains, seeds, and powdered foods in processing of grains, spices, cocoa, and other granular foods.

FREEZING FRUITS. Strawberries and peaches are two of the fruits difficult to freeze. Strawberries tend to lose juice upon thawing for consumption and peaches turn brown due to action of oxidase enzymes upon the tannins present. Pectin, with a low methoxyl content and easy dispersability in water solution has proved to be the best protective agent in freezing strawberries. Mixtures of pectin and sugar produced the best results, not only when loss of juice but also when color, shape, and general appearance of the sliced fruit were considered. Experiments were carried out under laboratory conditions in which fruit was frozen in a household type electric refrigerator.

PROCESSING SALT STOCK. The term "to process" as used in the pickling industry means to freshen: *i.e.* to reduce the salt content of brine pickles to some predetermined strength. During the past 40 years, much progress has been made in methods of processing salt pickles.

MEAT. The National Live Stock and Meat Board has prepared a sound motion picture, "Meat and Romance", based upon the dilemma of a bride facing the preparation of her first meal for guests. The 40-minute film portrays the various cuts, their nutritive value and uses, and how to cook, carve, and serve them.

ARMY FOODS. The Army would prefer to buy its canned foods in No. 10 cans because these are more convenient for use and because of the saving on tin. However, since the season's pack has been sealed up in cans of nearly normal market division, the Quartermaster General has decided to open bidding on Army canned goods in No. 2 and No. 2½ size cans to prevent speculation in the larger size.

BUTTER QUALITY. The American Butter Institute is concerned with problems of management and quality control of butter which entails quality cream production. A modification of the Wildman test is being studied, and a procedure for handling cream is being developed to the end that farmers will be encouraged to produce mold-free cream. The best type of cream-holding container for farm use is being investigated.

ARMY FOOD BUYING. Food procurement policies for the nation's vastly expanded Army are undergoing a sweeping overhauling designed to streamline operations and more closely align them to normal commercial practices. Chief objectives of the revised program are centralized and mass-quantity buying, direct buying from processors and manufacturers, and government inspection at the source. San Francisco, Chicago, and New York will be the central buying offices. Douglas C. MacKeachie, formerly purchasing director for the Great Atlantic and Pacific Tea Company, is in direct charge of the Army's food procurement policies.

FORTIFIED FLOUR. The Miller's National Federation made vitamins in flour the main subject of discussion at its meeting in St. Louis on December 4. In milling the wheat kernel to obtain white flour, retaining the wheat germ and

ADVANCES IN CANNING TECHNOLOGY

III. Modern Heat Processes for Canned Foods

● "This new method of preserving . . . proceeds from the simple principle of applying heat . . . in a due degree to the several substances after having deprived them as much as possible of all contact with the external air."(1)

In this concise manner, Nicholas Appert, discoverer of canning, summed up the salient features of his procedure. Appert's method consisted of sealing prepared foods in wide mouth glass bottles with corks and processing the sealed bottles in a bath of boiling water. The first English edition of his book (1) describes Appert's procedures for some fifty products. While the times of his heat processes varied between products, the temperatures of the processes were uniformly that of boiling water.

After the spread of commercial canning to America, early canners soon found that spoilage frequently resulted when Appert's heat processes were employed. Increasing the time of process at 212°F. alleviated but did not entirely control this difficulty. As recently described (2a), attempts were next made to increase the temperature of process, either by the addition of soluble salts to raise the boiling point of water, or by the use of the autoclave which permitted processing under steam pressure at temperatures above 212°F. About 1874, an improved type of autoclave was invented in the United States and gradually came into general use for certain types of products. While this device reduced spoilage considerably, losses still occasionally resulted due to inadequate heat processing.

Between 1895 and 1900, the new-born science of bacteriology was first applied to the canning industry. These early discoveries are well described elsewhere (2, 3); important among the findings was the fact that for products most favorable for growth of spoilage organisms, there is a minimum time of process which must be applied at a given temperature for a given can size, if preservation of the food is to be assured. The need for standardization of heat processes was thus clearly indicated.

During the past twenty years, the heat processing of canned foods has truly been placed on a sound scientific basis (4, 2b). The natural acidity of the food now determines the process temperature to be used. Foods with pH values below 4.5 may be safely processed at 212°F. or below; the "non-acid" foods with pH values above 4.5 require elevated process temperatures, 240°F. being the temperature most widely employed.

Today, adequate heat processes for non-acid foods are mathematically calculated using data which take into consideration all factors influencing the sterilizing value of a process. Processes thus calculated are thoroughly tested before being incorporated into bulletins of recommended processes which modern canners follow (5).

This establishment of adequate heat processes—particularly for the non-acid foods—is one of the greatest advances in canning technology made in the history of the industry. Today, it is apparent that the success of many of Appert's heat processes was due to fortuitous circumstances. The modern consumer, however, has the assurance that commercially canned foods are among the most wholesome foods reaching his table.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

REFERENCES

(1) 1811. Art of Preserving, N. Appert. Black, Parry and Kingsbury, London.

(2a) 1938. C. O. Ball. Food Research, *3*, 13.

(2b) 1923. C. O. Ball. National Research Council, Bulletin No. 37.
1928. C. O. Ball. Univ. of Calif. Publications in Public Health *1*, 15.

(3) 1937. Appertizing, A. W. Bitting. The Trade Pressroom, San Francisco.

(4) 1920. National Canners Assoc., Bulletin 16-L.

(5) 1939. National Canners Assoc., Bulletin 26-L, Fourth Edition.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned-foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the sixty-ninth in a series which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

ACCEPTED AMERICAN MEDICAL ASSN.

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

(In writing to advertisers, please mention the journal—it helps.)

other portions of the kernel containing the vitamins and minerals seems to be preferred to synthetic supplements. "Vimin" flour was recommended as the name for this new type of flour. Addition of thiamin (vitamin B_1) to give flour a minimum content of 1.66 mg. per pound was recommended, but riboflavin (vitamin B_2), iron, nicotinic acid, vitamin D and calcium were put on the optional list of nutrients which might later be added to this "Vimin" flour.

CHOCOLATE. Problems discussed at the chocolate products hearing included: the minimum percentage of chocolate liquor permitted in milk chocolate; the ratio of milk fat to non-fat solids to be used; the standardization of three different kinds of cocoa with a definite per cent of cacao fat for each; and the use of fats other than cacao, mixed with cocoa and sweet chocolate. Industry and government were in general agreement on most points.

CITRUS FRUIT WRAPPERS. Citrus fruit wraps containing 0.44% (calculated on weight of paper) of o-phenylphenol have been found to give considerable protection to oranges and lemons against *Penicillium digitatum*, *Penicillium italicum* and *Trichoderma lignorum*. The stated concentration, amounting to 9 mg. antiseptic per square foot of paper is about all that can be tolerated without injury to the rind. If the wrap is impregnated with a fatty oil, such as peanut or olive oil, more o-phenylphenol can be used without injury to the rind.

FOOD STABILIZING. A mixture of fresh eggs, liquid milk, shortening, salt, and sugar for use in bakery products, frostings, icings, fillings and confections, may be stabilized against bacterial or fungicidal spoilage without heat sterilization or use of refrigeration by means of homogenization. The essential factor of effective homogenization is that the degree of dispersion is sufficient to give fat globules of 1 to 2 microns diameter. The finished product is intended to withstand the rigors of non-refrigerated transportation and storage, handling in the factory or home in opened and partly emptied containers, and passage of time under ordinary climatic conditions.

ACID CANNED FRUIT. Since the mildest permissible cooking conditions are desirable for preserving color, flavor, and texture of acid canned fruits, tests have been made to ascertain the minimum safe sterilization time and temperature. Water sirup packs were sterile in 21 minutes sterilization time; juice sirup packs, 25 minutes. The influence of temperature depends partly on acidity. As the acidity of can contents decreases the temperature necessary for sterilization is increased. The organism causing spoilage is also an influential factor. For control purposes in the cannery it is essential that the final pH be kept at or below 4.4 and that sterilization be at 190°F. or higher.

ENZYME CONTROL. Degradation of proteins in wheat and other cereals during the processes of milling, baking and feed manufacture can be controlled by use of an inhibitor, iodine trichloride, which is much more effective, weight for weight, than potassium bromate.

WHOLE-GRAIN BREAD. From the dietetic standpoint, wheat and rye should be baked as whole-grain breads, for important dietary factors are lost in making white flour. The most important factor loss is vitamin B_1. Other dietary constituents which may be lost in the making of the white flour are vitamins A, B_2, and E, inorganic compounds supplying calcium, magnesium, phosphorus, manganese and iron, cellulose and certain flavor principles.

CHOCOLATE. Consistency of chocolate melts is a variable which candy manufacturers must keep under control, since it governs the thickness of chocolate coatings applied to confections. The flow of molten chocolate is a pseudoplastic system. In pseudoplastic flow, deformation begins as soon as any stress is applied, but rate of flow is not a linear function of stress.

CREAM. The Vacreator, a steam pasteurizer and flavor remover employed in the Australian dairy industry, has been compared with a Danish type tandem flash pasteurizer for treating tainted creams prior to churning. Butter made from feed-tainted or bacterial-tainted cream is much better after Vacreator treatment than after tandem flash pasteurization, but the taint is not totally removed. Drastic Vacreator treatment, which removes all flavors, may produce a flat insipid butter; however, desirable natural flavor can be restored by adding starter to the treated cream.

GULLIVER'S BONDS

As Gulliver was restrained by the Lilliputian bonds, so are many individuals deprived of real health by numerous tiny daily deficiencies in their diet. Day by day, the aggregate deficiencies may reach a total of definite inadequacy. Lack of these essential vitamins and minerals in the diet, if only to a small degree, may constitute a serious drawback to optimum health states.

More and more the profession is recommending COCOMALT for normal and therapeutic diets. The rich full flavor of this malted food dietonic, added to milk, is an incentive for both young and old to drink milk. COCOMALT contains calcium, phosphorus, iron . . . Vitamins A, B_1, D and G . . . quickly energizing . . . body building nutrients. Recent studies and references* confirm these facts.

Cocomalt is used by many physicians in diets for growing children and adults; for pregnancy and lactation, malnutrition, anorexia, pre- and post-operative patients, convalescence, febrile diseases, gastro-intestinal conditions.

COCOMALT
The Malted Food Dietonic for All Ages

R. B. DAVIS COMPANY, Hoboken, N. J.

BLUE CHEESE. The usual procedure in the manufacture of blue cheese is to salt the cheese fresh from the hoops either by floating in brine or by rubbing on dry salt. It was found that mixing salt with the curd to the extent of 2% curd weight at the same time that the mold powder was added, was advantageous. The cheeses were dry-salted afterwards as usual. This method often gives better mold growth and usually gives lighter color and better flavor.

CANADIAN BACON. In testing the effects of temperature on color and color stability of Canadian Wiltshire bacon by exposing samples for periods of 5, 10, 20, and 40 hours to temperatures of 68, 104, 122, 140, 158 and 176°F., maximum average color intensity was observed in samples heated at 168°F., while prolonged heating at 176°F. made the color paler.

DILL PICKLES. The effects of the addition of vinegar, lactic acid, and sugar on the rate of acid formation, sugar fermentation, production of bloaters, yeast fermentation, and the growth of acid-forming and peptonizing bacteria are discussed in relation to dill pickle fermentation.

Horwath Hotel Accountant

Vol. 21, January 1941

* Why food cost goes up when sales go down.—p. 2.
The trend of business in hotels.—p. 3.
Liquor profits. G. O. Podd.—p. 4.
* American-plan checking.—p. 6.
* Table d'hote luncheons and dinners.—p. 6.
How many employees?—p. 7.

FOOD COSTS. As part of a study of the effect of fluctuations in food and beverage sales on costs, three significant reasons are set forth for the rise in costs when sales fall off, and vice versa. Includes a discussion of reduced banquet business, inflexibility of the menu, and employees' meal costs, and a chart illustrating the effect of employees' meals for both highest and lowest months.

AMERICAN-PLAN CHECKING. Describes the duties of a checker in an American-plan hotel. The checker should have a record of all registered guests in order that the checker's sheet will indicate the number of meals to which each guest is entitled.

TABLE D'HOTE MEALS. A menu analysis of lunch and dinner selections during November in the main dining room and coffee shop of a transient New York City hotel indicates that some meals at both top and bottom prices could profitably be eliminated. Factors which determine whether a given meal should be left on the menu are stated and an accompanying chart lists the number of choices and number sold with entrée price and ratio of meals at each price to the total number sold.

Hospital Management

Vol. 50, December 1940

* Survey shows inadequacy of instruction to diabetic patients. M. E. Golder.—p. 39.
* Standard portion aids.—p. 42.

DIABETIC PATIENT INSTRUCTION. Questionnaire answered by 31 dietitians reveals inadequacy of instruction to diabetic patients. An extra dietitian or nurse, better teaching material, manuals for the patient to study during hospitalization, organization of diabetic clubs and classes for interns are recommended to correct the situation.

STANDARD PORTIONS. A tabulation of sizes of soufflé cups with standard portion sizes and portion yields of jams, jellies, appetizers and entrée garnishes.

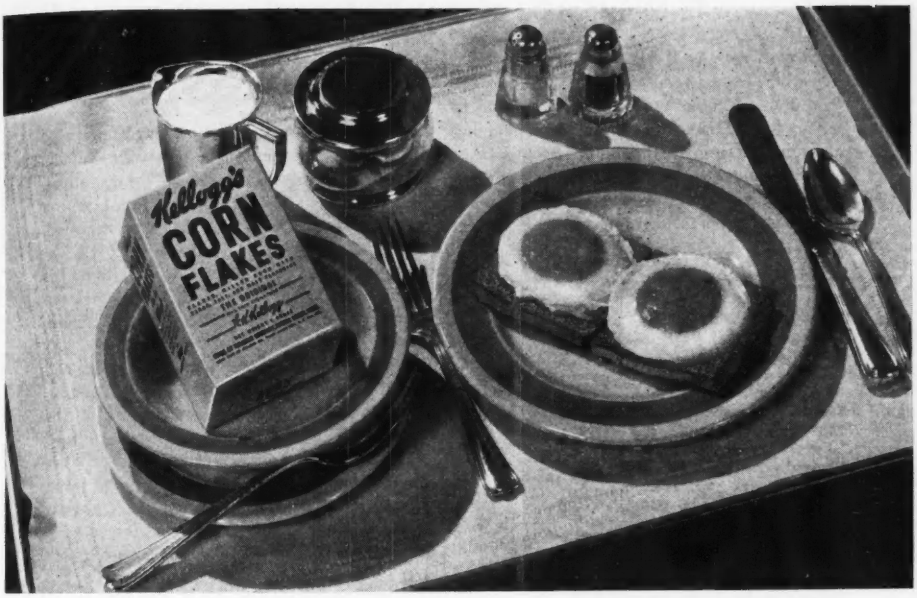
Hospitals

Vol. 15, January 1941

* Organization and administration of hospital dietetics department. M. M. Harrington.—p. 55.
Price trend of hospital commodities.—p. 96.
* Buying and preparation of food. M. McKinlay.—p. 106.

HOSPITAL DIETETIC DEPARTMENT. Discusses the administrative, financial, and educational responsibilities of the department. Emphasizes proper expenditure of hospital dollar, food cost control, personnel management, proper menus for all diets, and ways for dietitian to aid in educational program. Physical plant of department should be planned for efficient production, good working conditions and in relation to hospital as a whole. Types of departmental organization are explained and factors essential to wise selection of kitchen equipment are included.

BUYING AND PREPARING FOOD. Food should be purchased on a competitive basis, and for a



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particular use. Food cost control and perpetual inventory are essential to get best value from food dollar. Public health factor important in buying food. Ingenuity, careful menu planning according to season, palatability of food, waste studies, standardization of recipes, best working conditions and equal distribution of labor are important factors in food preparation.

Hotel Management

Vol. 39, January 1941

Drake camellia house.—p. 12.
The inn side. J. O. Dahl.—p. 13.
A pictorial review of modernization.—p. 14.
California sets the pace in modern highway tourist accommodations. W. O. Voegele.—p. 16.
Electricity for 4 mills per K.W.H. E. Douglas.—p. 18.
* Dessert profits.—p. 20.
* A symposium of 4 small hotels.—p. 24.
* Bayard says.—p. 28.
* Hors d'oeuvres. J. H. Breland.—p. 32.
* Good food hints. L. P. DeGouy.—p. 34.
* Equipment news for January.—p. 36.
* 1941 dessert tray style show.—p. 72.

DESSERT PROFITS. Fifty popular, inexpensive, quick-to-make desserts with recipes and service illustrations, include raspberry mousse, creamed rice pudding with pineapple, fruited tapioca pudding, and waffle shortcake among others equally inviting and different.

HOTEL SYMPOSIUM. A symposium of four small hotels located in different sections of the country presents a concrete picture and comparison of the equipment, architectural features, service offered guests, management organization, financial returns, and general organization of each.

HINTS FOR RESTAURANT OWNERS. Gives helpful hints for institution food managers. Movable pot and pan racks are step-saving devices; drop wall shelves utilize all available space during rush hours; new menu boards in the kitchen with fitted discs accurately record guest orders and reduce talking and confusion in the kitchen. Special methods of washing coffee bags are described and suggestions for reducing china breakage offered.

HORS-D'OEUVRE. Thirty-six hors-d'oeuvre of different shapes and designs accompanied by pictures and detailed recipes for twenty-five portions of 1, 2 or 2½ oz. size are presented. Includes canapés of crabmeat, olives, eggs, oysters, lobster, ham, catsup, caviar, cucumbers, dill pickles, sardines, anchovies, various cheeses and combinations.

DUCK. Tells how a roast duck may be prepared in various ways and suggests a fruit stuffing. How to prepare rice, various uses for ripe olives, and suggestions for new first courses, luncheon entrées and favorite Lenten dishes are included.

EQUIPMENT. The Armstrong Cork Company is featuring a new asphalt tile for floors in seven new colors. Food serving charts showing number of portions to a can, number of cans per serving, number of servings per month and monthly and annual consumption of all institutional size cans, are being distributed by the American Can Company. A new roll and food warmer with a standard size removable drawer lining, which permits the storage of food taken directly from the oven or serving tables without transfer of containers is now on the market. Thermostats control the temperature from 150°F. to 300°F.

DESSERTS. Fruit prune whip, banana apricot meringue pie, fruit nut scallop and baked ambrosia were favorite desserts shown at the 1941 dessert style show. Recipes are included.

Hotel Monthly

Vol. 48, December 1940

We visit a Statler executive housekeeper. L. A. Willy.—p. 24.
Restaurant women executives have their say.—p. 33.
* Building menus to sell food. A. Shircliffe.—p. 38.
The coffee shop.—p. 43.
* How Hotel Bancroft reduced its laundry operating cost.—p. 50.

Vol. 49, January 1941

* The Desert Inn of Palm Springs.—p. 11.
* Housekeeper added to Michigan State College hotel course staff.—p. 23.
* All about citrus fruits.—p. 24.
* For better country hotels. E. A. Boss.—p. 26.
When you have to say "No." H. J. Connor.—p. 30.
New coffee shop in Hotel Jefferson, Peoria, Illinois.—p. 36.
Festive menus. A. Shircliffe.—p. 37.
* The coffee shop. W. O. Waidelich.—p. 41.
* Portable lunch counter doubles as buffet table.—p. 51.
* Maids uniforms.—p. 61.

MENUS SELL FOOD. Defines the á la carte menu and the "carte du jour." The various captions of an á la carte menu as given are: appetizers, clear soups, egg dishes, fish and shell fish, poul-

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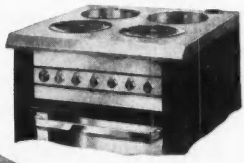

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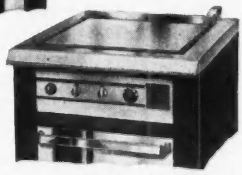

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try, chops and steak, chafing dish specialties, game, sandwiches and cold meats, sauces and garnishes, vegetables, salads, dressings, desserts, cheeses, fruits, breads and beverages. Arnold Shircliffe believes that the placing of individual foods offered on the straight á la carte menu in the positions that they should fill is definitely an advancement in menu building. A typical á la carte menu accompanies the article.

LAUNDRY COSTS. An efficient laundry service is one of the most important phases of hotel operation. A thorough check-up of the laundry facilities of Hotel Bancroft showed that the hotel was trying to get 25% more work out of the laundry than the equipment or employees were capable of delivering. Lists the benefits derived from this check-up and new equipment purchased to overcome this shortage.

DESERT INN. Pictorial article telling in detail the history of The Desert Inn, Palm Springs, California. Gives interesting information pertaining to climate, patronage, bungalows, dining room, kitchen, diet kitchen, pantry and preparation departments, plus a few construction problems.

HOUSEKEEPER LECTURES. A new series of lectures on housekeeping subjects is to be offered this spring and summer at Michigan State College. Mrs. Maude Bolton Free, formerly executive housekeeper of National Hotel Management organization, is to give a series of four lectures extending over three days of summer school.

CITRUS FRUITS. In a thesis submitted for the master of science degree at Michigan State College, the author discusses varieties and considers size, weight, flavor, juice yield and perishability. Graphs included picture at a glance data that would take hours to read.

COUNTRY HOTELS. Edwin A. Boss tells how he started his hotel career which today makes him owner of nine hotels and lessee of eleven. His advice to other managers or owners is to learn more about food service and preparation. Adjust prices to guest as well as to portions. Other helpful food suggestions given.

COFFEE SHOP. The key to the profitable operation of the catering department is control of the store-room. Lists various sources of leaks and methods of overcoming some. Description of efficiently organized and controlled store-room including duties of store-room boys and records they must keep.

NEW TYPE LUNCH COUNTERS. New lunch counters installed in alcove of the dining room of Evanston Hotel are built in units and may be moved to private dining rooms for buffet service when needed. Floor plan shows exact layout of counter in relation to dining room.

MAIDS UNIFORMS. New uniforms for the chambermaid and parlor maid recommended for use in a South Carolina hotel.

Journal of Home Economics

Vol. 33, January 1941

* Home economics teaching for today. S. F. West.—p. 1.
Human relations begin in the home. E. W. Burgess.—p. 8.
Shoes and foot health. D. J. Morton.—p. 22.
* Continuous inspection and U. S. labeled canned foods. A. L. Edwards.—p. 31.
* Controlling factors in food production. M. L. McGuckin.—p. 35.
* Retailers and consumers. Editorial —p. 39.
* The Waverly Press.—p. 40.
* New books.—p. 42.

HOME ECONOMICS TEACHING. Home economics has made a contribution in personal living, home life, and in the broader social, civic, economical and vocational life. The subject is examined to show its possibilities as an integrating unit of the school curriculum. Self realization, human relationships economic efficiency and civic responsibility are the four objectives now sought in teaching home economics courses.

INSPECTION OF CANNED GOODS. Five canneries instigated continuous sanitary inspection of their plants and labeling of the canned goods in terms of U. S. retail grades. The service also includes inspection of housekeeping facilities, the health of the employees, and practices used in handling foods. All canned products bearing U. S. Grades A, B, and C, are under the Agricultural Marketing Service's continuous inspection program.

FOOD PRODUCTION. The first step in beginning a food project is in the planning of satisfying menus to fit the needs and desires of the potential customer. From this evolves the secondary steps: selecting raw materials, supplies, equipment and personnel. High standards of food preparation, plus appealing menus which suit

For variety

IN THE ADULT SPECIAL DIET

Gerber's contributes a highly diversified list of foods to adult special diets calling for high nutritive values and ease of digestibility:

Gerber's Cereal Food is a nourishing, easily digested combination of cereals and other foods enriched in iron and the B_1 vitamin (thiamine). Its palatability is a feature that appeals particularly to adults.

Gerber's Strained Foods include 15 tasty varieties: 2 soups, 7 home-grown vegetables and 5 desserts. The vegetables and fruits are very finely strained and slightly seasoned for added flavor.

Gerber's Junior Foods (10 varieties) include several chopped vegetables. These foods again are slightly seasoned; in cooking the juices are evaporated instead of being poured off, retaining vitamins and minerals to a high degree.

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Gerber's *Baby Foods*

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the average purse, and attractive food service noticeably increase the volume of business and help to establish a reputation, according to Mary Love McGuckin of the Maramoor Tea Room, Ohio.

RETAILERS AND CONSUMERS. In the last report of the National Consumers-Retailers' Council, there was a noticeable advancement in certain integrating and coordinating activities of both organizations. A manual was prepared to aid both groups in the acceleration of fair business policies, and to stimulate the interest of the retailers and establish real cooperation between the two groups.

WAVERLY PRESS. Since April 1910 the *Journal of Home Economics* has been printed by the Waverly Press. A brief history of the company's first fifty years of service is given.

FAMILY FOOD. "Adequate Family Food Allowances and How to Calculate Them" is a new publication of the Social Welfare and Public Health Department of the American Home Economics Association. It contains a list of foods which meet the standards of nutritional requirements and other foods which are generally available to the average working-man's family. Detailed suggestions show how foods may be priced and food allowance calculated.

Modern Hospital

Vol. 56, January 1941

* Economies in cooking. G. H. Buck.—p. 84.
* Nurses study diet problems. E. Rupert.—p. 86.

EQUIPMENT. In the Mercer Hospital, Trenton, a modern stove installation replaced wall ranges. Gives comparative costs, before and after. The change in equipment resulted in lower food costs by reducing food losses during preparation, better working conditions and elimination of fire hazards.

NURSES STUDY DIET. Describes the six weeks' training course in dietetics for student nurses at Hackensack Hospital.

Nation's Schools

Vol. 27, January 1941

* Professional ethics—a code for administrators. W. G. Reeder.—p. 50.
* Lessons in food guidance. F. W. Roenigk.—p. 68.

Cafeteria setup at Elizabeth.—p. 69.

* Cafeteria at Onondaga Valley High School.—p. 70.

PROFESSIONAL ETHICS. A proposed code of ethics for those who direct public schools covers relations with the pupils and the community and state, and the profession. A list of unethical practices of teachers is included.

FOOD GUIDANCE. The most important duty of the school dietitian is to provide attractive, nourishing food at the lowest possible cost. She also should see that the children choose their food wisely. A committee of dietitians has been preparing guidance lessons for the younger children in the schools which cover choice of food, use of utensils, proper ways to eat, and correct deportment.

SCHOOL CAFETERIA. A plan of the cafeteria at Onondaga Valley High School, and an enlarged plan of the kitchen showing the placement of equipment. The routing from the supply elevator to the refrigerator, store-room, and preparation area is excellent. Fabricated equipment in the kitchen and serving area is of stainless steel.

Restaurant Management

Vol. 48, January 1941

* Northwestern University offers restaurant course.—p. 4.

Business building with ideas.—p. 14.

Dessert profits.—p. 20.

RESTAURANT COURSE. In February, Northwestern University started a 16 weeks' course in restaurant management. To be eligible for registration, students must be either high school graduates or 21 years of age. In the majority of cases the cost of the course will be $31. Two hours of college credit will be given to those satisfactorily completing the course. A tentative outline of subject matter includes consumer psychology, choosing a profitable location, requisites of a suitable building, the need for modernization, building an efficient organization, selecting, training, and compensating employees, purchasing, menu planning, food preparation, advertising, salesmanship, increasing business, restaurant costs and accounting, public relations and the restaurateur as a business man.

Opening new possibilities in the addition of iron to the diet

MOLASSES IS RICH IN IRON— OVER 80% AVAILABLE

Not alone the iron *content* of food, but iron *availability* as well is now known to be of prime importance in the diet.

To determine the availability of the iron content of New Orleans molasses and to supply specific comparison with other sources of food iron, the makers of Brer Rabbit Molasses co-operated in carrying out chemical, biological and clinical research. A brief summary of results of the chemical and biological tests is reported here for the information of the medical profession.

The chemical and biological tests[1] show availability of iron in Brer Rabbit Molasses to be over 90% in the Gold Label grade, in the Green Label grade over 80%.

Taste preferences for molasses differ. Brer Rabbit comes in two flavors to meet all requirements. If a dark, full-flavored molasses is desired, specify Green Label Brer Rabbit (Molasses "B" in table). If a light, mild-flavored molasses is wanted, specify Gold Label Brer Rabbit (Molasses "A" in table).

Since other brands were not included in the tests, these figures should be regarded as standard only for BRER RABBIT NEW ORLEANS MOLASSES, made from Louisiana sugar cane.

Because of the low cost and palatability of Brer Rabbit Molasses, may we suggest that you recommend the use of molasses where a higher iron content in the dietary is desirable. Penick & Ford, Ltd., Inc., Manufacturers of Brer Rabbit Molasses, New Orleans, La.

QUICK SUMMARY

RESULTS: New Orleans molasses—both by chemical and biological procedures—is known to be one of the richest food sources of iron—and even more important, it has now been proven that this iron is from 80% to 97% available, depending upon the grade of molasses.

HOW TESTED: (A) Chemically and biologically[1]. (B) Clinically[2].

SUGGESTED USES: For child feeding where its high calorie value *plus* iron content make molasses a valuable dietary asset; and to provide extra iron during pregnancy.

AVAILABLE IRON CONTENT: 0.653 mgs. per tablespoonful in Brer Rabbit Molasses—Gold Label grade. 1.078 mgs. per tablespoonful in Brer Rabbit Molasses—Green Label grade.

SUGGESTED AMOUNT: One to three tablespoonfuls daily. This may be taken plain, on bread, cereal, desserts or in milk. Physicians may vary the amount, depending on the iron need, age, condition and tolerance of the individual.

TABLE[1]	Total iron mg/100 gm	Per cent availability	Available iron mg/100 gm
MOLASSES "A"*	3.2	97	3.1
MOLASSES "B"**	6.0	85	5.1
BEEF LIVER	8.2	70	5.7
OATMEAL	4.8	96	4.6
APRICOTS (*dry*)	4.1	98	4.0
EGGS	3.1	100	3.1
WHEAT	5.0	47	2.4
RAISINS (*Muscat*)	3.0	62	1.9
PARSLEY	3.2	50	1.6
BEEF MUSCLE	3.0	50	1.5
OYSTERS	5.8	22	1.3
CABBAGE	1.8	72	1.3
MUTTON	5.1	24	1.2
LETTUCE	1.5	63	0.9
SPINACH	2.6	20	0.5

*Brer Rabbit—Gold Label **Brer Rabbit—Green Label

1. Am. J. Dig. Dis. Vol. VI, No. 7 (Sept.) pp. 459-62, 1939.
2. Clinical research completed. Paper being prepared for publication. Reprints of these papers will be sent physicians and nurses on request.

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NEWS NOTES

Sheppard Bill S.839. As this JOURNAL goes to press word is received from Washington that this bill which concerns the military status of the Army dietitian was introduced in Congress on February 10, 1941, where it was read and referred to the Committee on Military Affairs. It will be recalled that on February 27, 1939 Senator Sheppard introduced Bill S.1615 "to authorize the appointment of female dietitians and physical therapy aides in the Medical Dept. of the Army" before Congress and again on February 7, 1940 another bill S.3318, similar to the first. Members of the A. D. A. will wish to support this measure. Mary M. Harrington, Harper Hospital, Detroit, who heads the national committee on military status for Army dietitians, will outline the procedure to be followed by state organizations and individual members in support of the proposed legislation.

American Dietetic Association, Annual Meeting, St. Louis, October 20-23. Those who attended the tenth annual meeting of the Association in St. Louis in 1927 will remember this as one of the most successful meetings of the Association and are looking forward with special anticipation to the twenty-fourth meeting, to be held in St. Louis, with headquarters at the Hotel Jefferson. Ruth M. Kahn, Washington University Dispensary, is general chairman of the convention. Her committee chairmen are: program, Marie Harrington, Dairy Council of St. Louis; hospitality, Louise Wilkinson, Barnes Hospital; trips, Dorothy Dolan, St. Louis County Hospital; local publicity, Thelma Reinke Lison, Gardner Advertising Agency. Esther Lieberman, University of Michigan Hospital, is in charge of Educational Exhibits.

The St. Louis convention committees are planning a most interesting convention, with an informative, educational program and diversified entertainment. Because this city is located in a section of the country which has a rich, historical background, the St. Louis committees are emphasizing local color in their plans.

Gladys Hall, educational director for the A.D.A., is coordinator of convention activities and program.

American Home Economics Association. The thirty-fourth annual meeting of the A.H.E.A. will be held in Chicago June 22-29 with the Stevens Hotel as headquarters. Chairman of the committee on local arrangements is Frances L. Swain, director of household arts in the Chicago public schools. The program is in charge of a committee whose chairman is Lita Bane, head of the department of home economics at the University of Illinois. At the first general meeting, which will be open to the public, Miss Harriet Elliott, consumer commissioner of the National Defense Advisory Commission, will speak. At the second general meeting, to be at the University of Chicago, the principal speaker will be Clifton Maxwell Utley, well-known writer and broadcaster on international affairs and director of the Chicago Council on Foreign Relations. Group meetings will be arranged for members especially interested in the recognized divisions of the home economics field: family relationships, family economics, housing and household management, food and nutrition, and textiles and clothing. There will also be opportunity for members to discuss home economics progress and plans in various occupations such as teaching, extension service, business, institution administration, homemaking, research, and social welfare and public health work. Leaders in these occupations will be available for consultation at stated hours.

Staff Dietitians Needed for Federal Government Work. The U. S. Civil Service Commission announced on February 6 an open competitive examination for the position of staff dietitian. The salary is $1800 a year, less a 3½ per cent retirement deduction. Appointments are to be made in the Public Health Service, Veterans Administration and War Department. Applications will be rated as received at the Commission's Washington office until further notice. According to the announcement, staff dietitians have charge of the preparation and service of foods for regular and special diets, and work with physicians and others in the dietetic treatment of patients. Completion of a 4-year college course with major study in dietetics and of a graduate training course as student dietitian are required. Ap-

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Quality requirements for Star Bacon are strict. Only 60% of the bacon sides that grade "number one" are considered of sufficiently fine quality for the Star label. In addition, every Star Bacon side is skilfully trimmed . . . as the illustrations show . . . to the "heart" of the bacon. This lean, uniform center section is then carefully sugar cured, and smoked over strictly controlled hardwood fires.

This precise selection and preparation assures the consumer of uniformly fine bacon, flavorful and fresh.

High-Grade Nutritive Value . . . Thorough Digestibility

Pediatricians have long selected bacon as one of the child's first meat foods. And fine bacon is an excellent addition to the convalescent diet. The reasons are obvious. The lean meat of bacon is a complete protein. Add to that bacon's thorough digestibility, the energy values of its fat, and definite satiety value, and you have the basic nutritional advantage of this popular meat.

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plications will be accepted, under certain conditions, from persons now enrolled in an approved graduate training course. Further information and application forms may be obtained from the Secretary of the Board of U. S. Civil Service Examiners at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington, D. C.

Representatives of the Restaurant Industry to Serve in Connection with the Advisory Commission to the Council of National Defense. Horace L. Gardner of New York City and Clyde Davis of Wilkes-Barre have been appointed to the staff of George M. Moffett, director of the Food Products Section of the Advisory Commission to the Council of National Defense. Mr. Gardner was formerly director of the National Restaurant Association. With Mr. Davis he will coordinate the efforts of the restaurant industry in rendering assistance in the mess operations of both the Army and Navy. Mr. Gardner, with the cooperation of Dr. Mary de Garmo Bryan and a committee appointed by her, is revising the Navy cook book.

Chairman of Diet Therapy Section, A.D.A., Accepts New Position. Dorothy Duckles, 1940–41 chairman of this section and formerly attached to the dietary staff of the Massachusetts General Hospital, has accepted an appointment as nutrition supervisor, The Community Health Association, 137 Newbury Street, Boston.

Dietitian Appointed to the Red Cross-Harvard Medical Unit to England. Charlotte Raymond, Newtonville, Massachusetts, enrolled dietitian with the American Red Cross which is enrolling medical technologists at the request of the Surgeon General of the Army and in compliance with its policy of cooperation with both the Army and Navy, according to officials of the Red Cross, was chosen for this responsible assignment due to her fine record and qualifications. Miss Raymond received her elementary and high school education at Fair Haven, Vermont. She attended Middlebury College, Vermont, and trained as a dietitian at the Peter Bent Brigham Hospital, Boston; Truesdale Hospital, Fall River; Boston Dispensary; and Newton Hospital. She was community nutritionist with the Newton chapter of the Red Cross for three years, and with the Community Chest, Newtonville, five years.

Experts Map Plan of Diet Education. The New York *Times* for January 22 carried a front page third column on the "Nation's 'All-Out' Effort for Preparedness" through improving the general nutritional level. The housewives of the United States are soon to receive the most thorough education in the feeding of their families ever provided by any nation in the world in the hope that the people will learn a permanent lesson so that never again will American families be obliged to subsist on insufficient food in a land of plenty. "Proper nutrition," said Mr. M. L. Wilson of the Department of Agriculture, "is exactly as important to the country as are 50,000 airplanes that will fly 400 miles an hour. There is, now, a Nutrition Front." The National Research Council, the personnel of which was mentioned in the February JOURNAL, comprising a body of specialists who have been called upon in this emergency to supply the nation with the best scientific knowledge in all fields, has one committee advising Mr. Paul V. McNutt, Social Security Administrator and coordinator of all health, medical, welfare, nutrition and other related fields, as to the science of nutrition itself, and a second, covering American food habits. A third committee, headed by Mr. Wilson, is coordinating all the data in the hands of government departments that have anything to do with food, according to the *Times*. "Our Problem," Dr. Russell M. Wilder of the Mayo Clinic, is quoted as saying, "is to reach Mrs. Tom Jones in terms that she can translate into today's dinner. Milligrams and riboflavin naturally do not mean anything to her." Milo Perkins, president of the Federal Surplus Commodities Corporation, advised that various plans are under consideration to distribute more widely the foods that spell health but are out of the economic reach of the huge low-income segment of the country. One method is an extension of the free school lunches now provided by the Surplus Commodities Corporation.

"In the last war," Dr. Helen S. Mitchell who has been assigned to the McNutt organization, is reported as having said, "we skimped on

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white flour and sugar in this country to ensure steady supplies to the A.E.F. Today we would know better." Various millers have been experimenting with a new flour that has the enthusiastic endorsement of the scientists who are supplying the McNutt committee with expert advice. Very shortly the specifications of this new flour will be formally adopted and the product will receive a name. These specifications will be incorporated in the regulations of the Pure Food and Drug Administration and the scientists hope that the flour will sweep the country. "The new flour will be milled to use about 85 per cent of the wheat," said Dr. Mitchell. "Our present white flour is milled to 60 or 70 per cent, leaving only the very whitest part of the grain. With the new product, the food values that have been wasted will be utilized."

Bread and Flour Enriched in Vitamin B_1. Just before leaving to make a survey of the public health situation in London, Dr. Thomas H. Parran, Surgeon General of the U. S. Public Health Service, announced, according to the New York *Herald-Tribune* for January 20, that two new types of bread and flour rich in vitamin B_1 are expected to be ready for public sale in a short time "as the next great step forward in national health which is vital in total defense." Dr. Parran said that shortly after his return from Europe in about sixty days, he expected the millers and bakers working together to have two types of flour and bread ready. One apparently will be much like present white bread and flour but will be reinforced with the vitamin B complex. The other will be a flour enriched by a new process which recovers from whole wheat the vital elements now milled out and used for pig and chicken feed. Dr. Parran said that a shortage of the vitamin B complex was the greatest deficiency in the national diet. Vitamin B, he said, was largely responsible for absence of disease, and for efficiency, spontaneity, ability to work, endurance of muscle, keenness of nerve, "and that intangible but highly significant quality we call morale."

Training of Non-Professional Personnel in a Hospital Dietary Department. The study under the title, conducted under the chairmanship of Elizabeth Cole, Montefiore Hospital, New York, with Dr. Mary de Garmo Bryan as adviser, and originally initiated at the request of the Personnel Committee of the American Hospital Association, a preliminary report of which was presented at the New York meeting of the A.D.A., is being continued this year. At the time of the New York meeting around 400 copies of the preliminary report were sold to members who were asked to send to the committee any criticisms and suggestions which they might have. Miss Cole wishes to repeat this request for suggestions with regard to the content of the first report. At present the committee is working specifically on aptitude tests, rating scales and written detailed instructions for the following: meat cookery, vegetable cookery, and desserts, as well as instructions for waitresses, bus boys, counter girls and ward maids, and detailed directions for dishwashing, pot washing, mopping and cleaning of metals, storeroom procedure and operation of equipment. All members of the A.D.A. interested in the present study are invited to write Miss Cole concerning additional material and further suggestions.

Nutrition in the Public Health Program. With the increasing emphasis on nutrition in raising the level of the public health in the national defense program, more and more attention is being paid to the subject of nutrition by medical authorities and organizations. For example, the Department of Health of the City of New York has distributed a nutrition supplement through its publication, "Neighborhood Health," which includes short articles on the normal diet by Dr. Henry C. Sherman, one on diet for the growing child by Dr. Benjamin Kramer, and a third on diet for normal elderly people by Dr. E. L. Tuohy. Other interesting features are: a short paper on nutrition and weight control by Pauline Murrah; a chart clearly showing how to choose a balanced diet; and other short articles on diet in pregnancy, the use of milk, up-to-date information on the various nutrients of the balanced diet, and answers to questions commonly asked by the laity.

Another instance of increasing interest in nutrition was a well-rounded health panel meeting entitled, "The People's Food", arranged by the Mott Haven Health Center, Mott Haven District Health Committee, the Bureau of Health Education, the Medical Advisory Com-

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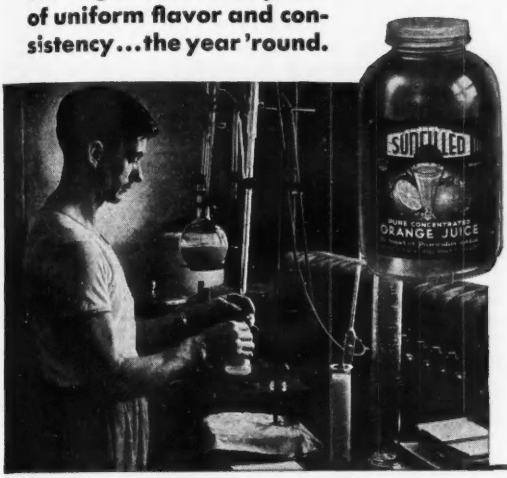

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mittee and the Bronx County Medical Society. Here experts on medicine and health, including physicians, research workers, nutritionists and home economists, took part. The discussions, open to all over 18 years old, are being presented every Thursday until March 20. The program included the following:

Value to the Body of the Proteins: Meat, Fish, Milk, Eggs, Dr. Donald D. Van Slyke, member, The Rockefeller Institute for Medical Research, New York.

Easiest and Best Sources of Proteins, Dr. Grace MacLeod, professor of nutrition, Columbia University.

Diseases Caused by Proteins and Their Prevention, Dr. Dana W. Atchley, Columbia University.

Value to the Body of Fats, Professor Isidor Greenwald, New York University College of Medicine.

Diet and Underweight, Dr. Charles H. Helman, Morrisania Hospital.

Diet and Obesity, Dr. A. S. Blumgarten, Lenox Hill Hospital.

Diet and Diabetes, Dr. Herman O. Mosenthal, New York Post-Graduate Medical School, Columbia University.

Diet of the Diabetic in the Home, Grace O'Keefe, assistant director, Nutrition Service, New York Chapter, American Red Cross.

Value to the Body of Vitamins, Salts, Minerals and Water, Hazel E. Munsell, nutrition chemist, U. S. Department of Agriculture.

Easiest and Best Sources of Vitamins, Salts, Minerals and Water, Mrs. Ruth Barker, nutrition consultant, Community Service Society, Bronx District.

Diseases Caused by Deficiency of Above and Prevention, Dr. Herbert Pollack, Mt. Sinai Hospital.

A Balanced Diet for Children, Pauline Murrah, nutrition consultant, Department of Health, New York City.

The Medical Need for a Balanced Diet for Children, Dr. Daniel J. Dolan, Post-Graduate Hospital.

A Balanced Diet for Adults, Ethel Maslansky, home economist and nutritionist, Jewish Social Service Association.

The Medical Need of a Balanced Diet for Adults, Dr. Samuel Gitlow, Lebanon Hospital.

What is a Healthful, Economical Diet? Nelle Sailor, nutritionist, Community Service Society.

The Proper Cooking of Food in the Home, Mrs. Ruth Hecht, home economist, Department of Public Welfare, New York City.

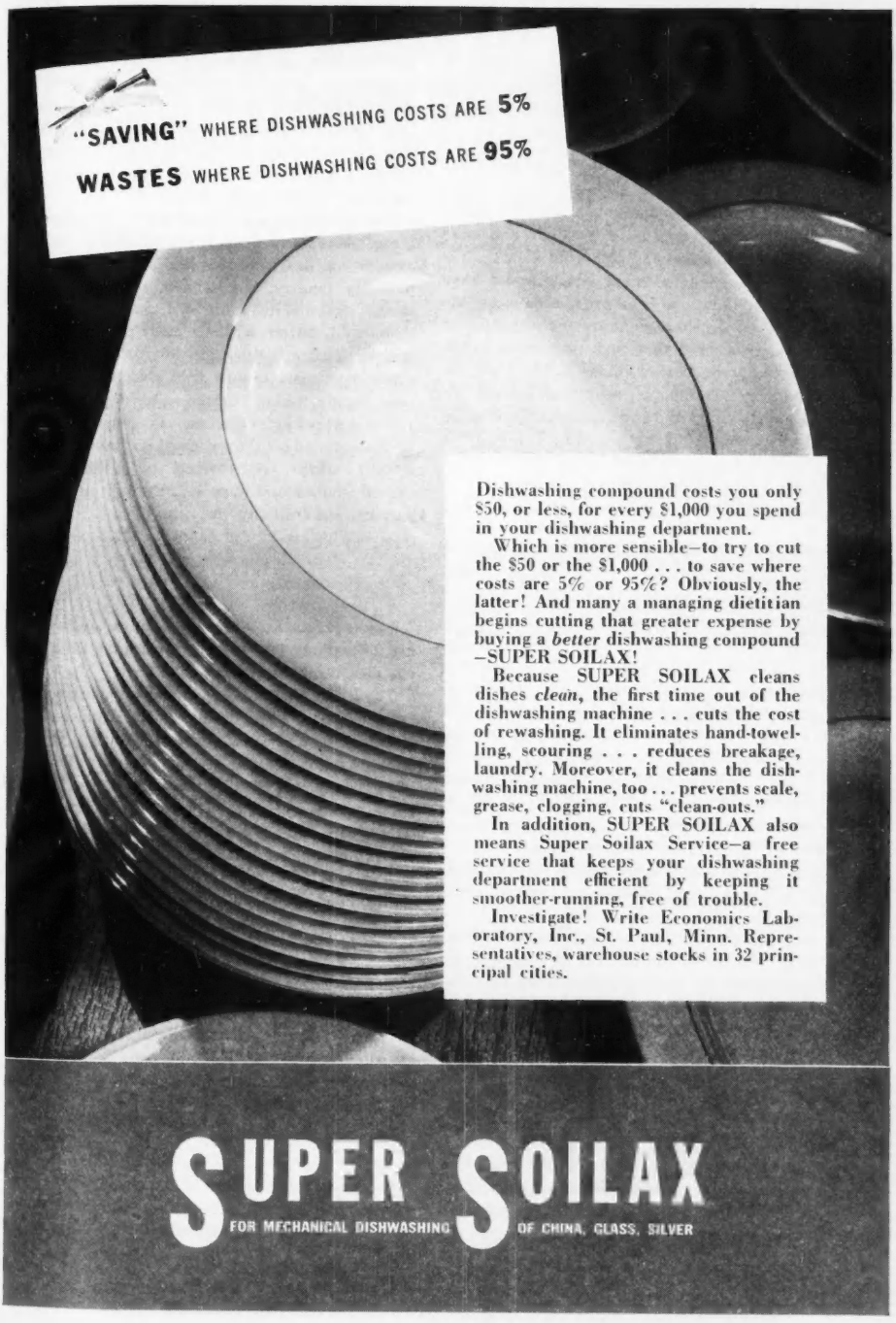
The Economical Purchasing of Food, Mrs. Luise Addis, home economics consultant, Family Service Division, Community Service Society.

New Frontiers of Medicine. This is the title of a course of 15 weeks which began February 5 at the New School for Social Research, New York. On February 19 Dr. Magnus Gregersen, professor of physiology, College of Physicians and Surgeons, discussed "Physiological and Chemical Factors in Maintaining Equilibrium"; and on March 12, Dr. Norman Joliffe, associate professor of medicine, New York University College of Medicine, will speak on "Isolation of Vitamins and their Significance in Clinical Medicine."

New Publications of the Bureau of Home Economics, U. S. Department of Agriculture. One of these, a folder entitled "Eat the Right Food" will, it is believed, be widely used in local nutrition programs, organized as part of the national effort for total defense. The price of this folder is 35 cents per hundred copies, for sale by the Supt. of Documents, Washington, D. C.

The new leaflet on "Fats and Oils for Cooking and Table Use", by Elizabeth Fuller Whiteman and Florance B. King, priced at 5 cents per copy, answers many of the queries constantly received regarding food value of various fats, and the selection, uses, and cost of same.

American Diabetes Association, Inc. In January the organization of this new association was announced with Dr. Cecil Striker, Cincinnati, as president; Dr. Herman A. Mosenthal, New York, vice-president; and Dr. Elliott P. Joslin, Boston, honorary president; membership to consist of those primarily interested in diabetes. Officials plan to have a one-day scientific session at the time of the A.M.A. Cleveland meeting. Dietitians who with the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diabetes specialists are mutually interested in the care of the diabetic, will watch with interest the development of this new association.

Food and Drug Administration. The Food Standards Committee of the Food and Drug Administration met on February 3 to consider definitions and standards of identity for frozen desserts and standards of maturity and frost damage for oranges and grapefruit.

A proposed amendment which would have permitted the use of benzoate of soda in tomato catsup was denied after testimony presented at a hearing showed that such permission would promote production of catsup of less than the usual concentration and acidity and would not promote honesty and fair dealing in the interest of the consumer.

Before the Federal Food, Drug and Cosmetic Act of 1938 became effective, the Secretary of Agriculture exempted for periods of about two years a number of food products from the provisions of the Act which requires label declaration of ingredients. The purpose of the exemptions was to afford time for the formulation, promulgation and effective application of definitions and standards of identity for the products as follows: white, whole wheat, milk and raisin bread; evaporated, sweetened condensed, and malted milk; unmixed, immature canned vegetables and fruits; canned oysters, clams and shrimp; sauerkraut; olives in brine, cheeses; oleomargarine; mayonnaise dressings; fruit preserves; sweet, and sweet milk chocolate; lemon, orange and vanilla extract; ice cream; frozen custard; milk sherbet; water ice; ice sherbet, and nonalcoholic carbonated beverages. It has been found impossible to complete the program contemplated within the allotted time but work is proceeding as rapidly as possible toward the formulation of proposals for hearing on the remaining exempted products. No formal extension of time of exemption for any of these articles is contemplated, but it will not be the purpose of the administration to inaugurate action against any of these articles on the ground that they violate provisions of the Act pending the effective application of definitions and standards of identity or an announcement giving due notice that definitions and standards of identity will not be prescribed.

The Federal Security Agency announced on January 11 that regulations have been promulgated establishing definitions and standards of identity for Cheddar, washed curd and Colby cheese, to become effective April 9, 1941, and that these were being published in the Federal Register of January 9, copies of which may be obtained from the Supt. of Documents, Washington, at 10 cents each.

Decomposition, insect-infestation, and other forms of contamination continued to be the causes for seizure of various lots of the following products: poultry, raw salmon, frozen strawberries, date and nut confection, canned tomato soup, moldy butter, raisins, mixed dried figs and prunes, Brazil nuts, dried apricots, huckleberries, apple chops, and canned field peas; also corn meal, candy, peanut butter, canned pumpkin and canned red kidney beans. Economic violations accounted for the seizure of low-fat butter, dressed turkeys, fresh oysters, peanut butter, canned smoked turkey paste, olive oil, salmon, paprika, and fruit-flavoring sirups.

The following lots of canned food products were seized because of substandard quality and not labeled as required: peas, tomatoes, pears, and pitted cherries.

Deceptive packaging accounted for the seizure of various lots of tea, medicated throat pastilles, candy and pitted dates.

The report of the Chief of the Food and Drug Administration, 1940, of interest to all administrators of food services, covers the work of the administration for the fiscal year ended June 30, 1940, and marks the final report of the administration as a unit of the Department of Agriculture and the completion of a third of a century of enforcement of the Food and Drugs Act of 1906 and the statute which supplanted it, the Food, Drug, and Cosmetic Act of 1938.

Service and regulatory announcements have been issued for the listing of coal-tar colors which are harmless and suitable for use in food, drugs, and cosmetics, and certification of batches of such colors. Lists of coal-tar colors for use in food, drugs, and cosmetics, as well as specifications for the identity and purity to which these colors must conform in order to be certified, are included.

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Committee, 30 Rockefeller Plaza, New York. The pamphlet lists four ways by which consumers can protect themselves against impure foods, drugs, and cosmetics: (1) read all labels carefully, particularly the fine print, before you buy; (2) pay close attention to the "cease and desist" orders of the Federal Trade Commission against untrue or unfair advertising as reported in newspapers and magazines; (3) cooperate with consumers groups which are seeking better protection from the federal and state governments; (4) report apparent violations of the law to the Food and Drug Administration, Washington, D. C.

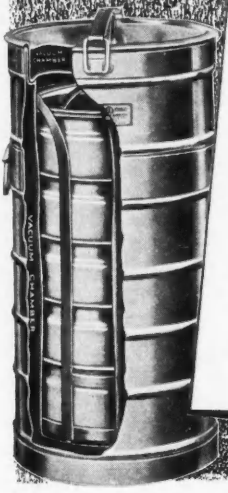
Public Affairs Committee pamphlets may be purchased from local news-stands, bookstores or from the committee at 10 cents each, or at a yearly subscription rate of $1.

Cancer Control Month. In April the President will proclaim this month as "Cancer Control Month" throughout the country and the Women's Field Army of the American Society for the Control of Cancer will conduct its annual appeal for funds. Clarence C. Little, Sc.D., managing director of the society, writes: "For decades we have known that cancer was a cruel and ruthless killer, an enemy of homes and of human happiness. It has broken up families and robbed children of their parents. For years it has been a menace while we allowed it to breed fear and discouragement. Because other diseases were less vigorous and menacing, and because they provided us with less opposition in diagnosis and treatment, we have attacked them first and with more optimism. The Women's Field Army Against Cancer has spread knowledge of the signs and symptoms that may mean cancer. Millions upon millions of people have received this information without cost. Organized meetings have been addressed by selected medical speakers and under proper medical supervision indigent patients have obtained diagnosis and treatment.

Thirteenth Anniversary Number of the Harofe Haivri. Attention is directed to the appearance of a special issue of *Harofe Haivri* (The Hebrew Medical Journal), a semi-annual publication, edited by Dr. Moses Einhorn, this issue of which is dedicated to Professor Sigmund Freud. The journal is intended to develop and advance Hebrew medical literature and to be of particular service to the medical department of the Hebrew University in Jerusalem. The contents are not confined to technical medical topics, but are divided into several sections covering a variety of related subjects, such as medicine in the Bible and Talmud, old Hebrew medical manuscripts, Palestine and health, etc. Another section presents from time to time medieval medical treatises, heretofore unpublished and interesting both from an historic and scientific viewpoint. In this volume a manuscript is included, entitled, "Hygiene of the Body", which was written in verse by Yehuda al-Charisi, who lived in Spain during the 12th century. In addition to an English-Hebrew medical dictionary, the original articles are summarized in English.

Mead Johnson Vitamin A Award. On November 19, 1940, the judges for this award met at Memphis and stated that "considerable progress in research with vitamin A has been made, principally along two main lines of endeavor. The fields showing most promise are those involving dark adaptation and blood serum studies. The judges feel that there is still too much uncertainty about the relative merits of several investigations to warrant making the award at this time. It was therefore agreed that the giving of the award be postponed until clear resolution of various factors is achieved." The sum of $15,000 called for by the main award remains as a cash deposit in escrow with the Continental Illinois National Bank and Trust Company of Chicago, and will be paid immediately upon official notification of the judges' decision.

The Journal Continues to Reach its Foreign Subscribers. Former associates of Dr. Edith Klarin at Cornell, Columbia and the University of Wisconsin, will be glad to have word of Dr. Klarin in Stockholm, Sweden, at Beckbrannarbacken 4. In a letter to Helen Clarke, Dr. Klarin writes: "I am getting the JOURNAL of the A.D.A. regularly and it means much more than before to feel the contact with people working in the same field in other countries; it breaks the isolation which we feel so much these days. I think that is the worst of all—being cut off from friends and neighbors. Otherwise we cannot complain. No cold weather so far, hot water twice a week and only a few foods



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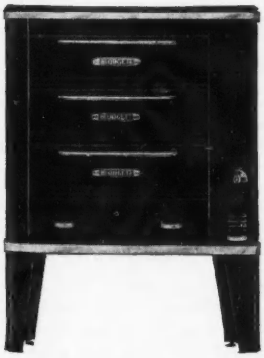

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rationed. I am trying to find ways and means of going to America next fall to study the training of dietitians. We are planning to start that school soon."

Dr. Alice F. Blood of Simmons College to Retire. According to the New York *Times* for February 1, Dr. Blood, who has been attached to Simmons College since 1904 and director of the School of Home Economics since 1913, is to retire in June. Dr. Elda Robb of Temple University, Philadelphia, has been named professor of nutrition and director of the school to succeed Dr. Blood.

Lulu Graves to Reopen Classes in Nutrition. According to the Berkeley (Calif.) *Gazette*, Miss Graves is extending the special foods and nutrition study groups initiated last semester under the auspices of Berkeley's parent-education program. Seventy women were enrolled in the previous course and have requested that the course be continued in addition to a new class started in January. In the continuation of the original course, using its data of food study as a background, the material will cover the application of nutritive principles to daily menus, their relation to health, correct combinations of foods, and major factors influencing nutritive values and palatability. The new class will also consider canned foods, dried foods, labels, food laws, personal hygiene and sanitation, utensils, germicides, helpful and harmful micro-organisms, beverages, spices and flavors and any requested subjects.

Course in Institution Management. Teachers College, Columbia University, announced on January 10 that a course in institution management, food purchasing for institutions, and current procedures in large quantity purchasing, carrying 2 points credit toward the master's or undergraduate degree, would be given by Adeline Wood, registration closing February 4.

Suggestions for Holiday Decorations. A pamphlet entitled, "Fun for Christmas", has been prepared by Mrs. Luise K. Addiss, home economics consultant of the Community Service Society of New York, 105 East 22nd St., New York. The pamphlet offers simple, inexpensive suggestions for Christmas tree and table decorations and Christmas sweets, and emphasizes the desirability of children taking part in plans and preparation. The material was assembled and issued only in time for use by the above society and nearby agencies just before the holidays, which accounts for its tardy announcement. If other agencies are interested in this booklet in anticipation of future holidays, copies are available at 7 cents.

Connecticut Dietetic Association. A "refresher" meeting was held jointly with the Connecticut Home Economics Association at the Y.W.C.A., New Haven, February 14, the sessions opening with a tour of Yale Dining Halls, and a tea. The following program was presented:

Guides for Food Purchasing, Adeline Wood.

St. Valentine Dinner: Address, The Hon. Robert A. Hurley, Governor of Connecticut.

Recent Developments in Textiles, Ruth O'Brien.

Connecticut Women Organize for Defense, Laura Hale Gorton.

What the Schools Can Do to Aid the Consumer in Making Wise Purchases in the Present Emergency; Helen Zwolanek.

Illustrative Material to Aid the Teacher, Ruth O'Brien.

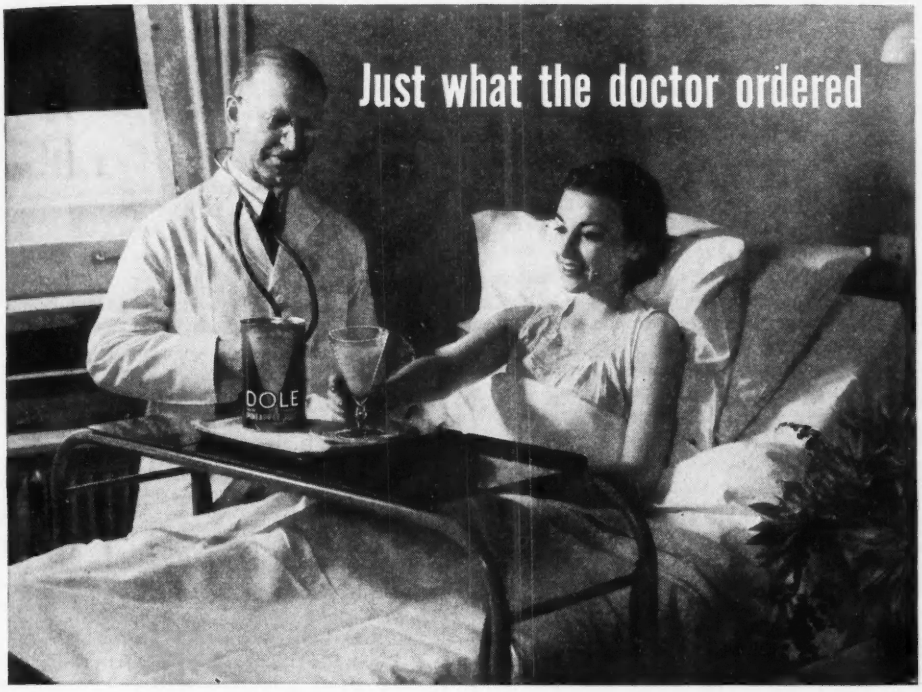
What Professional People Can Do to Keep Up To Date, Mary Evans.

School Lunches in Connecticut, Report of School Lunch Questionnaire, Elizabeth Nickerson.

Nutrition and the National Defense Program, Dr. George R. Cowgill.

Among those listed on the program as taking part in discussions were: Drs. Mary de Garmo Bryan, Teachers College, Columbia University, and Margaret Chaney, Connecticut College; Mrs. Thelma Tubbs Currier, Federal Surplus Commodities Corporation; Helen Johnson, State Department of Health; Edith Mason, state home demonstration leader; Elizabeth Nickerson, State Department of Health; and Helen Zwolanek, St. Joseph College.

Dietitians in the Hartford area met for dinner at the Howard Johnson restaurant in Wethersfield on November 6, 1940. The program was devoted to reports of the A.D.A. convention. Newly elected officers are: president, Leah Kane, New Britain General Hospital; secretary-treasurer, Catherine Campana, Family Service



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Society, Hartford; and program chairman, Helen Robinson, Veterans Home, Rocky Hill.

Dr. and Mrs. Eugene Langan are now at home at 724 Taylor Street, N.E., Washington, D. C., where Dr. Langan is doing chemical research work at Catholic University.

Louise Mohr, formerly chief dietitian at the Waterbury Hospital, is now with the Y.W.C.A. in Denver.

Isola Denman, now Mrs. John Robinson, has resigned her position as director of the Food Service Department, G. Fox and Company, Hartford.

Miriam Taylor, formerly at the Waterbury Hospital, announced her marriage to Mr. Andrew Brown in November and is now living in Franklin, New Hampshire.

Alice Cattanach, New Haven Hospital, is one of the lecturers for the Clinical Congress sponsored by the Connecticut State Medical Society at the Yale School of Medicine on Thursdays from January 9 through April 10. Miss Cattanach's lecture on April 10 will be the concluding one in the course on "Diseases of Nutrition." Her subject will be "The Calculation of Diets."

Vacancies for dietitians in state institutions in Connecticut are now being filled through competitive examinations conducted by the Connecticut State Personnel Department. The first examinations for dietitians were given in July, 1940. Dorothy Milavetz, Grace Hospital, New Haven; Helen Hubbell, Yale School of Nursing, New Haven; and Elizabeth Jensen, Connecticut Dairy and Food Council, Hartford, served on the examining committee. Because of the small number of applicants in Connecticut, the residence requirements were waived. A total of 76 applications were received for the positions of chief dietitian and dietitian. As a result of the examinations the following appointments were made: Sarah A. Vroman, chief dietitian, Southbury Trade School, Southbury; Mildred L. Frederick, chief dietitian, Fairfield State Hospital, Newtown; Suzanne Carion, head dietitian, Veterans Home, Rocky Hill; Mollie P. Schwartz, dietitian, Cedarcrest Sanatorium, Hartford; and Mary H. Laughlin, dietitian, Fairfield State Hospital, Newtown.

Florida Dietetic Association will hold its annual meeting in Orlando on April 26. The guest speakers will be Frances MacKinnon, University Hospital, Ann Arbor, Michigan, and Gladys Hall, educational director, the American Dietetic Association.

Illinois Dietetic Association. Newly elected officers for 1941 are: president, Mildred Bonnell; president-elect, Rita Black; vice-president, Wintress Dalby; secretary, Madge Limes; and treasurer, Josephine Schildberg.

The state association will meet in Urbana March 7-8 in the new Union building of the campus. An interesting program is being planned by the local group.

The Home Economics Club of Peoria has extended an invitation to dietitians to join them in their local meetings. There are twenty dietitians in Peoria, six in institutional work and fourteen employed in WPA projects.

Louisiana Dietetic Association. At the December 9 meeting at Charity Hospital, New Orleans, Dr. D. C. Brown spoke on "Allergy Diets."

Dr. H. H. Beard, professor of biochemistry at Louisiana State University Medical College, spoke at the January meeting on "Muscle Metabolism" and also discussed recent research on nutrition in cancer development.

Mrs. Elva Kahrs has resigned her position as head dietitian at Touro Infirmary, New Orleans, and accepted an appointment as dietitian in charge of public welfare at Baton Rouge. Mary Lois Gill of Florida State Teachers College replaces Mrs. Kahrs at Touro Infirmary.

Mary Alberi, formerly of Iowa University Hospital, Iowa City, has accepted a position as dietitian at Charity Hospital, New Orleans.

New Orleans dietitians were entertained at a Christmas party December 16 at the home of Madge Myers, Mary Rooney and Agnes Blazek.

Fairfax T. Proudfit met with the committee at Charity Hospital, December 29, to discuss plans for the southeastern convention to be held in New Orleans in April. Eleanor Bowdoin, Baptist Hospital, New Orleans, has been appointed chairman of the convention committee.

Loraine Root, formerly of Dowes, Iowa, has returned to her position as dietitian at Charity Hospital.

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Massachusetts Dietetic Association. On January 7 Mr. Gordon D. Hutchings, assistant manager in charge of personnel, Hotel Statler, addressed the association on "The Functions of an Organized Personnel Department."

Two round-table discussions were also held in January: one on administrative problems, led by Gertrude McDonald; the other on diet therapy, led by Elizabeth Kingsbury.

Gertrude Spitz, chairman of nutrition in the National Defense Program for the state dietetic association, has sent out two registration cards to all dietitians in the state. These are to aid the national Association in making a survey of all dietitians for such service as may be necessary in connection with the present emergency.

In accordance with the suggestions given by the A.D.A. Committee on National Defense, the Boston Dispensary Food Clinic is carrying on the following activities: An exhibit on "Food and National Defense" based on the defense issue of the *Consumers' Guide* has been completed. The exhibit, which stands in the corridor of the Food Clinic, has attracted so much interest that it will be shown at the Y.W.C.A.

Frances Stern, at the request of the members of the Rest and Nutrition Classes, conferred with the School Committee of the City of Boston relative to the continuation of these classes. At the December meeting of the Massachusetts Institute of Technology Women's Association, commemorating the birth of Ellen H. Richards, Miss Stern spoke of Mrs. Richards' influence on nutrition and public health. In January, Miss Stern was interviewed on the history, organization, and activities of the Food Clinic, for "Women on Review", a popular radio program. Loda Davis, assistant to Miss Harriet Elliott, following a visit to the Food Clinic, wrote an article entitled, "Impressions of a Food Clinic", which is to serve the Advisory Commission to the Council of National Defense in answering inquiries regarding the organization of Food Clinics.

Dorothy Duckles, who has accepted the position of nutrition supervisor for the Community Health Association, 127 Newbury Street, Boston, will have charge of nine district nutritionists and the teaching of good food habits through the 140 visiting nurses of the association. Her position as head of the North End Diet Kitchen, Massachusetts General Hospital, will be filled by Elmira E. Becka, formerly public health nutritionist at the University of Michigan.

Jean Schwartz, former Massachusetts General Hospital student, has accepted the position of assistant dietitian at the Desert Sanatorium, Tucson, Arizona.

Helen Elder, graduate of Peter Bent Brigham Hospital, has accepted a position as assistant dietitian at the New England Deaconess Hospital.

Mary Randolph is resigning as assistant dietitian at the New England Deaconess Hospital, March 1, and is to be married in April. Miss Morris, a recent graduate of the Beth Israel Hospital, has accepted a position as assistant dietitian at the New England Deaconess Hospital.

Hazel Curran, a graduate of the Good Samaritan Hospital, Cincinnati, is now assistant dietitian, Massachusetts Women's Hospital.

Elizabeth Seeley, a September graduate of the Massachusetts General Hospital, is now in charge of Converse House at the New England Baptist Hospital.

Helen Finklestein of the Boston Dispensary Food Clinic has announced her engagement to Dr. Joseph Rosenthal, chief of the Diabetic Clinic of the Dispensary.

The Nutrition Staff of the State Department of Public Health has been increased to include Julia Dwight, Simmons College, 1938, and Ruth Dickenson, Framingham Teachers College, 1939. Miss Dwight will be nutritionist for Barnstable County and Miss Dickenson will fill a similar position in Franklin County.

Sophie Gordon has been transferred to the Worcester Health District and is organizing a nutrition program in that area.

Teresa O'Rourke has announced her marriage to Mr. Harold Price of Roslindale, Massachusetts.

Dr. and Mrs. Sylvester McGinn (Janice Barkley) announced the birth of a daughter, Mary Margaret, in December at the Phillips House.

New Jersey Dietetic Association. The Executive Board meeting in Newark January 13, decided to assess an additional twenty-five cents per member to be used as a fund for the Red Cross. The Board consists of: the president, Elizabeth Rupert, Hackensack Hospital; president-elect, Lillian Park, Essex County Hospital,

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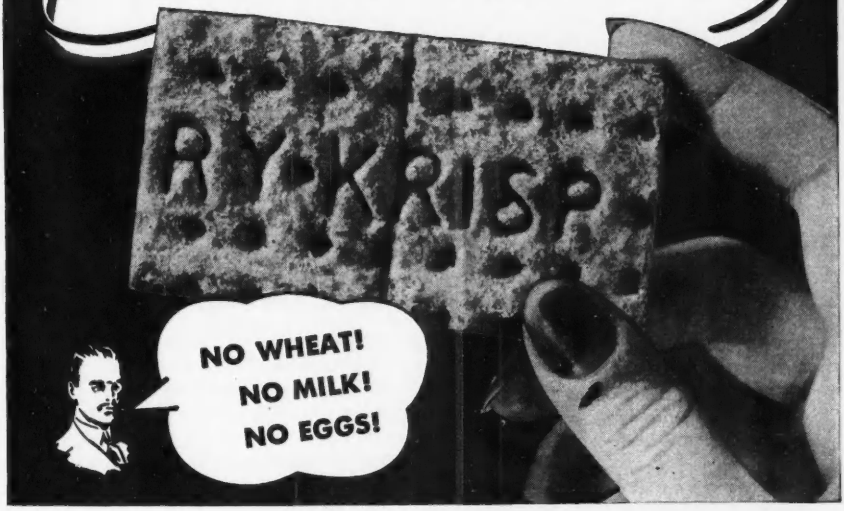

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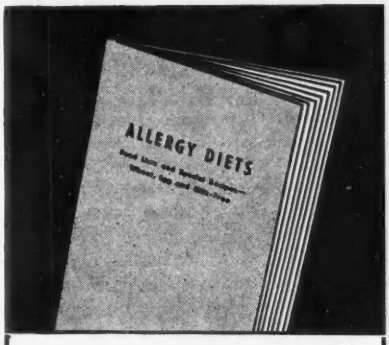

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Selma Silverman, a graduate of the Cooperative Course for Student Dietitians, has replaced Beatrice Goldstein at the Beth Israel Hospital, Newark, Miss Goldstein having gone to the Veterans Hospital, Dayton, Ohio.

The student dietitians of the New Jersey Cooperative Course were entertained at the home of Doris Bollenback, Elizabeth, on January 4.

The engagement of Elizabeth Rupert to Mr. George Fassnacht has been announced. Mr. Fassnacht, a graduate of Purdue and New York University, is employed by the Indiana State Department of Health. The wedding is planned for the spring.

Greater New York Dietetic Association. "Diet in Gastro-intestinal Diseases" was the subject of a talk given by Dr. Charles A. Flood of the Columbia University Department of Medicine at the January meeting at Presbyterian Hospital. Dr. Flood pointed out that diet plays a major part in the treatment of most gastro-intestinal disorders, the management of patients with ulcer of the stomach or duodenum being largely accomplished by means of dietary regulation. An allergy to certain foods causing chronic gastro-intestinal symptoms may often remain unrecognized for years, said Dr. Flood, and patients are often regarded as incurably neurotic until eventually the offending foods are discovered, and after their elimination from the diet, the patient becomes free from the digestive symptoms of which he complained.

Seventy students comprise the membership list of the student clubs of the association. The November meeting was arranged by Mary Ruth Curfman of St. Luke's Hospital, and in December the meeting was held at Stouffer's East 57th St. restaurant under the direction of Ruth Witherspoon. Dorothy Stephens and Lenna Cooper were guests of honor, the latter speaking briefly on the aims and purposes of student clubs.

Mary Barber, President of the American Dietetic Association and her sister, Edith Barber, foods editor of the New York *Sun*, enjoyed an extended Christmas cruise, visiting friends in Puerto Rico.

Margaret Gillam has resumed her duties at the New York Hospital after a prolonged illness.

Membership is thriving in the association, sixty new members having joined since the beginning of the fiscal year.

New York State. The Executive Board meeting of the state dietetic association was held at the home of Mrs. Ethel Lewis Marth, Rochester, January 11. The general business and policies of the association were discussed and a defense program planned. Plans were also perfected for the spring convention in Buffalo. The following were present: Henderika J. Rynbergen, president, New York Hospital; Mrs. Marth, president-elect, Highland Hospital; Marie C. Sisson, vice-president, Meyer Memorial Hospital; Genevieve Coon, secretary, Albany Hospital; Genevieve Moyer, treasurer, Albany Hospital; Mame T. Porter, constitution chairman, State Department of Social Welfare; Martha P. Deal, chairman of Nominating Committee, Samaritan Hospital; Blanche Bohach, member, House of Delegates, Rochester General Hospital; Eleanora Sense, editor of the *Bulletin*; Lois M. Dorr, diet therapy chairman, and Elizabeth Henry, community education chairman, Visiting Nurses Association, Rochester.

Members of the Defense Committee of the New York State Dietetic Association are: Mame T. Porter (advisory member); Jessie G. Cole, Albany; Ruth Silverman, Syracuse; Eleanora Sense, New York; Elizabeth Henry, Rochester; Marie C. Sisson, Buffalo; Virginia Mathews, Rome; Gertrude Robin Boldes, Johnson City;

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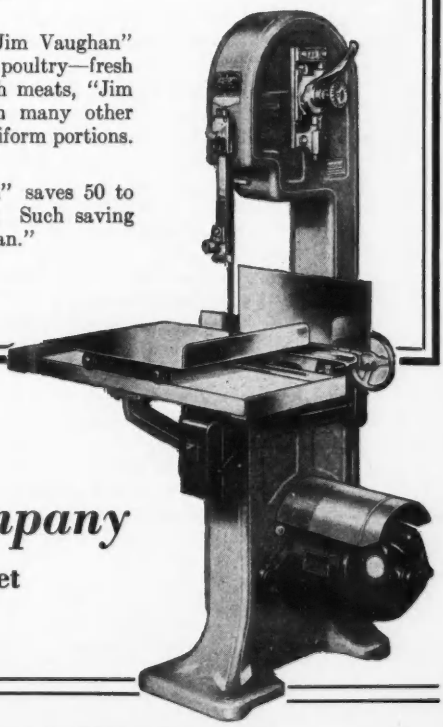

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Mrs. Marth (ex-officio); and Blanche Bohach, chairman, Rochester.

The Rochester Dietetic Association met on January 20 at the Visiting Nurse Association, with Elizabeth Henry as hostess. Effie May Winger announced that the "Refresher Course" date had been changed to March 21 and 22. Mrs. Ruth Boretti of Strong Memorial Hospital gave a talk on "Hospital Social Service."

Dorothy Elizabeth Haas, formerly dietitian at Hillside Home, has announced her marriage to Captain Carl Gustav Wendelin of Buffalo. They will live at Sea Island Beach, Georgia, where Captain Wendelin is on duty with the 209th Coast Artillery Regiment.

Mrs. Ethel Lewis Marth spent the Christmas holidays with her family at Hot Springs, Arkansas.

Mrs. Van Dussen, dietitian at Highland Hospital, has been vacationing in New York.

The Buffalo Dietetic Association held its January meeting at Buffalo Teachers College with Frances G. Hepinstall, librarian at the college, as guest speaker.

In February the group, as a member of the Inter-Club Council, attended a lecture by Ruth Bryan Owen Rohde. After the meeting the dietitians attending made a tour of inspection through the classrooms of the Home Economics Department.

The Mercy Hospital has installed new "Magic Chef" ranges and broiler. There are two sections to the range: one an all cover top and the other divided with one fry top section and four open burners. A new Hobart dishwashing machine will soon be installed, of stainless steel structure and thermostatically controlled.

The Hudson Valley Dietetic Association met on January 6. Dr. Jane Dale reviewed Sherman and Lanford's *Essentials of Nutrition* and led a discussion of other current books. Refreshments were prepared and served by Patricia Martin whose home is in New Zealand. Homemade Devonshire clotted cream was served with strawberry jam, hot biscuits and coffee.

Mame Porter, president of the association, recently spent two weeks in the Binghamton area making a food and clothing consumption study for the State Department of Social Welfare with which she is connected.

A number of the members are actively engaged in the registration of dietitians for defense. Jessie Cole is chairman for the district.

Ernestine Elmendorf Taylor, former president of the association, is the joint author with Harold B. Pierce of "The Calcium and Phosphorus Content of Certain Vegetables Grown Under Known Conditions of Fertilization" in the September *Journal of Nutrition*. Miss Taylor submitted this as a thesis offered for the master's degree at the University of Rochester.

The January meeting of the Utica Dietetic Association was held at the home of Mrs. Kenneth Storms, Lucille Coupe assisting the hostess. The program consisted of a discussion on "The Nutritional Problems of a Hospital Dietitian" and a round-table discussion on "Dietitians for Defense."

Mrs. Marian Porte, dietitian at Faxton Hospital, was married on October 4 to Mr. Kenneth Storms of Utica.

Elizabeth McManus, dietitian at St. Elizabeth's Hospital, has a new assistant, Kay Ludy of Canton State School.

Lucille Coupe is taking Marjorie Dunn's place as assistant at Faxton Hospital.

Hilda Cruikshank, Mercy State Hospital, announced her marriage to Mr. Morris L. Bailey on December 7.

Northwest Dietetic Convention. Edna Mae Brown, publicity chairman for the convention, who conducts the Homemakers Service of the *Spokesman-Review* under the name Dorothy Dean, writes that members of the A.D.A. in the northwest section are planning an outstanding convention to be held in Pullman, Washington, April 6-8. The guest of honor will be Mary I. Barber, President of the Association, and in addition several other well-known nutritionists are expected to speak at various meetings. Interesting features of the program include discussions on nutrition and national defense, and recent advances in the field of nutrition; an opportunity to inspect Washington State College and the University of Idaho, including the home economics buildings and the work as carried on; a trip over the famous Lewiston grade to Lewiston, Idaho; and exhibits of institutional and individual interest, including frozen foods, linens, new and outstanding nutrition books, hospital menus, tray favors and the Washington State College home economics museum. Convention chairmen are as follows: general, Dr. Neige Todhunter; program, Margaret Ritchie; housing and meals,

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High in nutritional value, rich in vitamins and minerals, and remarkably palatable, New Improved Ovaltine aids in solving two of the difficult problems which so often confront the dietitian: how to lend appetite appeal to the bland diet and at the same time enhance its protective food value.

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This delicious food drink is mechanically as well as chemically bland, since it is virtually free from fibrous residue and does not evoke an excessive secretion of gastric juice. Its delightful taste does not jade the appetite, and permits of its use in diets calling for multiple daily feedings over prolonged periods.

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Ovaltine now comes in 2 forms—plain, and sweet chocolate flavored. Serving for serving, they are virtually identical in nutritional value.

Lucretia Battles; transportation, Muriel Stein; registration, Beatrice Finkelstein; and publicity, Edna Mae Brown.

Ohio Dietetic Association. Officers for the Cleveland Dietetic Association for 1940–41 are: president, Florence Levy, Sunny Acres Sanatorium; vice-president, Catherine Jupp, University Hospitals; secretary, Mary Tyler, Mount Sinai Hospital; treasurer, Margie Jo Glauner, St. Luke's Hospital. The Membership Committee consists of Bessie Wallace, Mt. Sinai Hospital, chairman; Marese Cohen and Jean Waterson, City Hospital. The publicity chairman is Dorothy Ridler, Welfare Federation. Dorothy Proud, University Hospitals, as chairman of the Program Committee, is assisted by Martha Chase, St. Alexis Hospital; Gladys Mason, Huron Road Hospital; and Elizabeth Perry, City Hospital. Social Committee members are Helen Mallory, chairman; Catherine Jarrett, Mt. Sinai Hospital; Ruth Klein, Sunny Acres Sanatorium; and Kathryn Donley, University Hospitals. The nominating chairman is Marie Hines, University Hospitals, assisted by Margaret Walsh, Lakewood Hospital, and Mardry Johnson Pavlish, St. Luke's Hospital.

The Cleveland association heard Mrs. Bessie Brooks West describe her stay in Hawaii at the October meeting. Mrs. West also showed pictures of her travels. Other guests were Dr. Martha Pittman of Kansas State College and Mrs. West's mother, Mrs. Brooks. Mrs. Janet Shevlin and Mr. George Thoms of Standard Brands Inc., demonstrated the use of frozen eggs at the November meeting.

At the January meeting, Dr. Jay L. Otis, assistant professor of industrial psychology, Cleveland College, spoke on "The Scientific Selection of Employees." A discussion by guest hospital superintendents followed. Mr. George Bugbee, City Hospital, led the discussion and Dr. Fred Carter, St. Luke's Hospital, and Mr. Glen E. Clasen, assistant director, University Hospitals, participated.

Mrs. Philip G. Wolff (Elsie Hughes), formerly of Cleveland, is now living at Saranac Lake, New York.

Elizabeth Sullivan, People's Hospital, Akron, reports the recent installation of an attractive special diet kitchen with splendid equipment. Elizabeth Schofield, formerly of St. Paul, is now assistant dietitian at this hospital.

Dietitians of Dayton were hostesses to Rachael Reed at the January dinner meeting. Miss Reed, formerly of Dayton, told of her work with Borden's in Chicago and discussed consumer attitudes. Dorothy Throssell, state nutritionist on Dr. Koehne's staff, reported on her activities in this field at the February meeting.

Hannah Owens, Dayton Dairy Council, and student dietitians of Miami Valley Hospital have begun volunteer work teaching nutrition classes conducted by the Red Cross.

Phyllis Nussmeyer, Miami Valley Hospital, was discussion leader on dietetics at the annual "Career Conference" at Fairview High School.

The 1940–41 class of student dietitians in training at University Hospitals, Cleveland, includes Elinor Benson, University of Minnesota; Gertrude Blaker, University of Nebraska; Agnes Carlson, University of Cincinnati; Marguerite Brown, University of Idaho; Jane Cavert, University of Minnesota; Jane Diehm, Western Reserve University; Helen Giffen, Michigan State College; Thelma Glazier, Massachusetts State College; Elizabeth Harris, Texas State College for Women; Bonita House, Purdue University; Gayle Nach, Western Reserve University.

Students who have completed the 1939–40 course at University Hospitals have been placed as follows: Eloise Argo, Mount Sinai Hospital, Cleveland; Marjorie Esson, Salem Hospital, Salem, Massachusetts; Mrs. Winthrop Darlington (Willene Fager), Agricultural College Cafeteria, University of Nebraska, Lincoln; Virginia Mae Powell, Duke Hospital, Durham, North Carolina; Marjorie Powles, Midway Hospital, St. Paul; Margaret Benedict, Marjorie Healey, Roselyn Jackson, Kay Johnson, University Hospitals of Cleveland; Gertrude Speck, Anna State Hospital, Anna, Illinois.

Oklahoma Dietetic Association. The Executive Board met January 19 at the home of the president, with the following members present: Maxine Turner, Oklahoma state nutritionist; Mildred Shears, Western Oklahoma T. B. Sanatorium, Clinton; Mrs. Lola Heuerman Janis, Oklahoma A. & M. College, Stillwater; Laura Miller, University of Oklahoma, Norman; and Ann Hains, St. Anthony's Hospital, Mrs. Muriel Tice Nelson, Veda Bailey, Wesley Hospital, and Mrs. Margaret Durrett, Okla-

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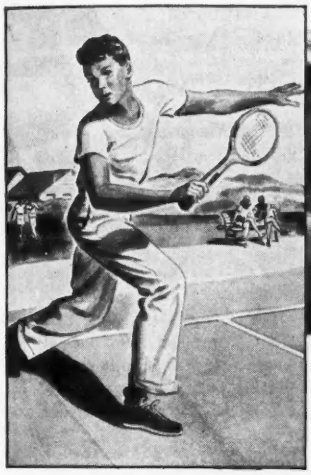

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homa City General Hospital, all of Oklahoma City. Committees were appointed and plans were made for the state convention at the Skirvin Hotel, Oklahoma City, April 25–26. The theme of the convention will be national defense. The committee in charge of arrangements includes: J. Marie Melgaard, State University Hospital, chairman; Mrs. Betty Stearns Edge, Y. W. C. A.; Helen Butler, Anna Maude Cafeteria; and Martha Spradlin, State University Hospital. Ann Hains was appointed chairman of the committee on exhibits; Pauline Naifeh, Norman, the educational exhibits; Mrs. Margaret Durrett, publicity; and Mrs. Lola Heuerman Janis, the program.

Three student dietitians completed their year's work at the University Hospitals January 31, as follows: Martha Osborn Aldredge, Oklahoma A. & M. College; Katherine Lucille Hyde, University of Wisconsin; and Mary Katherine Robb, University of Kansas. At the graduation banquet on January 28, Robert U. Patterson, dean, and superintendent, School of Medicine and Hospitals, University of Oklahoma, was the guest speaker.

Student dietitians entering upon their year's work February 1 at the University Hospitals were: Juanita Chandler, University of Oklahoma; Margaret Macku, Iowa State College; Lois May Sears, University of Colorado; Doris E. Stenger, Washington State College.

Corrine Calhoun has accepted a position as dietitian at the Anna Maude Cafeteria, Oklahoma City.

Philadelphia Dietetic Association. The February meeting was held at Drexel Institute of Technology with Grace Godfrey, dean of the School of Home Economics, in charge. A symposium on "Problems in the Education of Hospital Dietitians" was presented by the following directors of home economics and hospital courses for student dietitians: Grace Nadig, Temple University; Henrietta Fleck, University of Delaware; Henrietta Pribnow, Hahnemann Hospital; Elizabeth Miller, Philadelphia General Hospital; Lucille Refshauge, Mt. Sinai Hospital; Marian Mowbray, Temple University Hospital; Martha Walker, Jefferson Hospital; Marion Evans, Graduate Hospital; and Lillian Hack, St. Christopher's Hospital. Elizabeth Raymann, student at Drexel Institute, represented the undergraduate group on the panel. Many student dietitians and home economics students attended the meeting as guests of the association.

Martha E. Tarbox has opened an office in Philadelphia to serve as nutrition consultant and aid to physicians of the city in the teaching of patients. Martha Alderman Hunscher has returned to take over Miss Tarbox's duties in the Food Clinic at Pennsylvania Hospital.

Pittsburgh Dietetic Association met February 11 at the William Penn Hotel. Mr. Maize of the Duquesne Light Company discussed electric cookery and demonstrations were given by representatives of different electrical equipment companies.

The first meeting of the Pennsylvania Nutrition Defense Council was held on January 24 in Harrisburg. Miss Irene Willson, chief of the dietary department of the Shadyside Hospital, who attended the meeting, had been appointed by Dr. Hetzel of Penn State College as one of the three representatives of the Pittsburgh area.

Rhode Island Dietetic Association. Susanne Elwell, formerly of the Butler Hospital, Providence, has accepted a position as dietitian in the Panama Canal Zone.

Mrs. Catherine Heilmann has resigned her position as dietitian at the Wallum Lake Sanatorium to make her residence in New York City.

Alice Berstein, a former student at the Beth Israel Hospital, Boston, has accepted a position at the Miriam Hospital, Providence.

Marjorie Underwood, a former student at the Peter Bent Brigham Hospital, Boston, has accepted a position as assistant dietitian at the Homeopathic Hospital, Providence.

Mrs. Thelma Tubbs Currier of the Federal Surplus Commodities for Connecticut and Rhode Island was the speaker for the December meeting. Her talk on surplus commodities was interesting and enlightening.

For the January meeting the Department of Public Health presented a film on dishwashing with Mr. Charles Hammon as guest speaker.

Texas Dietetic Association. An interesting feature of the January issue of the state *Bulletin* is the inclusion of photographs and brief items concerning leading members of the state asso-

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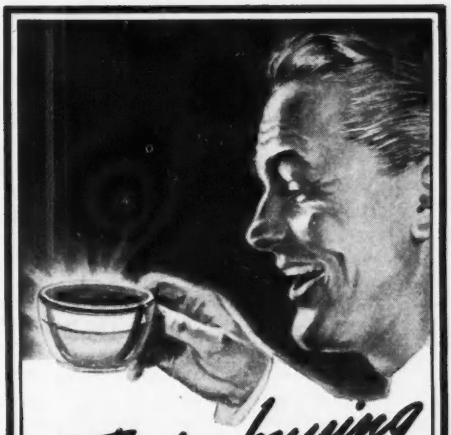

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ciation. Mamie Ruth Harris in a "President's Message" reminds the members that T.D.A.'s annual meeting will be held in Houston March 14–15.

The Veterans Hospital, a general medical hospital of 263 beds, was opened in Dallas in August, 1940. Mrs. Hannah B. Murphy, a graduate of Kansas State College, is chief dietitian and Mrs. Theodora Goodrich, a graduate of Stout Institute, Wisconsin, is staff dietitian.

The Lubbock Dietetic Association met in October with Lillian Johnson and Mary Alice Crosson as hostesses. Margaret W. Weeks presented information concerning the work of the State Nutrition Committee on Food Standards for Texas; Captain Lambrect of the Salvation Army discussed their school lunch program for Lubbock school children; and Dr. M. H. Benson of the West Texas Hospital spoke on "Nutrition in Practice."

Tidewater Dietetic Association held its third meeting at Pender Hall, Norfolk, Virginia. Dr. James Andrews, Jr., graduate of the Yale School of Drama and teacher of English, College of William and Mary, Extension Department, spoke on "Drama in the Movies".

The January meeting was held at the Nurses' Home, St. Vincent's Hospital with Anne Liester and Mary Jo Wood as hostesses.

Ruth Winget resigned her position at the Norfolk General Hospital, February 10.

Frances McBeath, dietitian in the Home Service Department, the Virginia Electric and Power Company, is teaching classes of negro youths who will be trained in mass feeding to help in the Defense Program.

A series of articles on the "Dietitian and Nutrition in the National Defense Program", written by the chairman of publicity, Bertha Ide, is being sent to all papers in Virginia.

The sub-chairman of the following sections have been appointed for the Tidewater Dietetic Association: community education, Frances McBeath; diet therapy, Erna Mae Behrend, Norfolk General Hospital; professional education, Anna Liester, St. Vincent's Hospital; administration, Louise Mulherin, United States Veterans Facility.

Alma Bering recently spoke to the Southwestern Dietetic Association on the Sheppard Bill.

Sub-chairman of the following sections have been appointed for the Southwestern Dietetic Association: community education, Elizabeth Younger, Jefferson Hospital; administration, Marion Ball, Veterans Administration Hospital; diet therapy, Mildred Cottier, Jefferson Hospital; professional education, Lockie Cox, Roanoke Hospital.

Lockie Cox is now dietitian at the Roanoke Hospital. She was formerly at the Baptist Hospital, Louisville, Kentucky.

Elizabeth Younger, formerly of St. Luke's Hospital, Jacksonville, Florida, is now assistant dietitian at Jefferson Hospital. Miss Younger is a graduate of Medical College of Virginia Dietetic School.

Mildred Cother has announced her engagement to Mr. N. A. Murdock of the Hobart Manufacturing Company.

Washington Dietetic Association met September 24, 1940, for the first meeting of the year. Dr. Edwin G. Bannick spoke on "Diet in Relation to Internal Medicine" and a discussion period followed.

At the October 15 meeting at Harborview Hall, Mr. Finn of the U. S. Department of Agriculture read a paper on "Grading Fruits and Vegetables," followed by Mr. Scott of the H. J. Heinz Company, who presented a moving picture, "Yesterday, Today and Tomorrow."

The national convention was reported by Mary Northrop and Dorothy Anderson, at Virginia Mason Hospital, November 13.

A dinner meeting was held at the University of Washington Commons on January 14, with Dr. Jennie Rowntree speaking on "New Developments in Nutrition."

Many changes in personnel have occurred in the association in the fall and winter. The following marriages have been announced: Ayleen Frederick, formerly of Sacred Heart Hospital, Spokane, to Mr. Edward Erickson; Flora Howe, formerly of Everett General Hospital, to Mr. Christian Heimbigner; June March, formerly of King County Hospital, to Mr. Howard Kirkpatrick; Eleanor Gerst, formerly of Marine Hospital, now at King County Hospital, to Mr. Russell Wilson; and Ella Pollinger, King County Hospital, to Mr. Robert Crawford.

Bonnie Beilfuss, formerly of the Swedish Hospital, is now attending Merrill-Palmer School, Detroit.

The Newer Concepts of Meat in Nutrition

Meat

and the Growth Needs of the Child

THE phenomenon of growth is dependent upon a large number of factors for its normal continuation. Second only in importance to the specific effect of the growth hormone elaborated by the anterior pituitary lobe is the influence of the nutritional state upon the growing child.

From a biochemical standpoint growth consists of the ability of the organism to retain certain dietary elements and to utilize them not for energy or storage purposes but for adding to the mass of the organism in an orderly, coordinated fashion. Thus the metabolic output in terms of calories is less than the intake, the difference being utilized to a large extent for growth.

Since a large proportion of the weight gains of infants and children consists of increase in the size and bulk of muscular and other tissues, the protein intake must be adequate not only in quantity but also in quality. Meat, one of the excellent and abundant sources of complete protein, provides all of the essential amino acids found indispensable for growth. Meat also contains appreciable amounts of phosphorus and iron, and of the vitamins B_1 (thiamine), G (riboflavin), and the P-P factor (nicotinic acid). Readily digested, meat properly prepared may be advantageously given to children early in life together with the other foods dictated by the child's age.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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CHICAGO

Marjorie Dunlap, formerly of St. Luke's Hospital in Bellingham, is now chief dietitian at Tacoma General Hospital. Her assistant is Rebecca Korking. Elizabeth Hunsaker replaces Miss Dunlap at St. Luke's Hospital.

Flora McLaughlin is now at Everett General Hospital.

Dorris Forbes, formerly of the Swedish Hospital, is now on the staff of Stanford University Hospital, San Francisco. Charlotte Nilsson of Denver Presbyterian Hospital replaces Miss Forbes at the Swedish Hospital.

Ethel Engdahl Seymour has resigned from the Virginia Mason Hospital, and her position has been filled by Mildred Spoklie.

Betty Schroeder has gone to Alaska to continue the type of work she had been doing in Spokane County.

Eileen Ambrose is the new assistant dietitian at the Deaconess Hospital, Spokane.

Marian Thomson resigned her position at King County Hospital to replace Eleanor Ketchum as home economist for the King County Relief Organization.

Daisy Anderson, formerly of Riverton Sanatorium, is now on the staff at King County Hospital.

Eleanor Ferguson has joined the growing staff of dietitians at Fort Lewis, Washington.

Phyllis Cronin is now assistant dietitian at Children's Orthopedic Hospital, Seattle.

Most of last year's graduates of the Seattle Training Course have been placed in positions: Addene Saxton is at Presbyterian Hospital, Denver; Sibel Taylor, Swedish Hospital, Seattle; Virginia Gallagher, State Hospital, Fort Steilacoom, Washington; Mary Lou Anderson and Pauline Fischer, King County Hospital; Edith Harris, Vancouver; Marian Whalen, University Hospital, San Francisco; Ruth Beckman, Hahnemann Hospital, Portland, Oregon; Lois Cooper, Army Hospital, Fort Lewis; Eleanor Smatlin, for two months at the Swedish Hospital, was married in February; Dorothy Eicher is doing relief work at the Swedish Hospital.

Have You Heard?

(The following material has been contributed by the members of the California Dietetic Association, and compiled by Eleanor Bowyer of Scripps Metabolic Clinic.)

The use of unpolished stainless steel for sinks and table tops has been practical at Alameda County Hospital. Unpolished stainless steel gains a polish from cleaning and rubbing, while polished stainless steel grows duller and more satin-like in finish, so that the appearance at the end of a year or two is the same. The purchase price of the unpolished metal is considerably lower than that of the polished.

Where the cost of stainless steel is prohibitive, bar top finishes are excellent for table tops, shelves, drain-boards and counters. The Bakelite base becomes very hard and resists heat, alcohol, stains and knocks. This finish, while expensive, is not so costly as stainless steel or tile and is more durable than the latter. It is comparatively easy to apply.

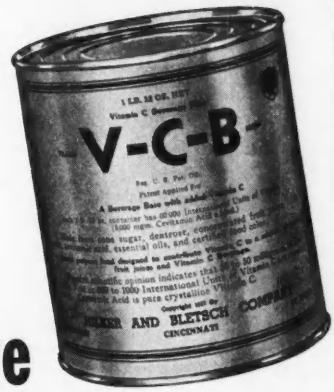
There is available a new style of rubber matting to be placed in front of kitchen ranges to prevent slipping and to give a resilient base for the workers to stand on. The old style rubber material soon deteriorated from the grease and heat. The new matting is treated with a material which makes it heat resistant and prevents deterioration from grease.

The polishing of stainless steel or monel metal table tops with a dry cloth and cleansing powder is a much more rapid and efficient process than the ordinary method of wetting either cloth or powder.

The alumilite finish may be applied by electrolysis to old aluminum trays, eliminating the nuisance caused by the rubbing off of aluminum oxide and the labor involved in polishing the trays.

Rubbing the hands with a light coating of fat before peeling zucchini, chayote, or other summer squash, prevents the roughness and irritation ordinarily caused by handling these vegetables.

Frozen sweetbreads may be sliced while still hard, dipped in egg and crumbs and fried. This permits more servings than other methods of preparation, and makes an inexpensive and popular meat dish.



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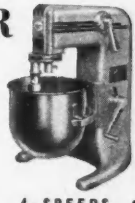

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WHO'S WHO IN THIS ISSUE

Eugene F. Du Bois, M.D., noted authority on metabolism, has been professor of medicine at Cornell University Medical College since 1930, medical director of the Russell Sage Institute of Pathology since 1913 and consulting physician and physician-in-chief, New York Hospital, since 1932. Dr. Du Bois served with distinction during the first World War as lieutenant-commander in the Medical Corps, U.S.N.R.F. He is a member of the American Physiological Society and the National Academy of Sciences and author of the authoritative work, *Basal Metabolism in Health and Disease.*

William S. Langford, M.D., is clinical professor of psychiatry, School of Medicine, Columbia University; assistant attending pediatrician, Babies Hospital and Vanderbilt Clinic; and director of the Pediatric Psychiatric Clinic, Babies Hospital, at the Columbia-Presbyterian Medical Center, New York.

Morris Steggerda for the past ten years has worked as a physical anthropologist among the Maya Indians of Yucatan, Mexico, negroes in Alabama, Navajos in Arizona and Dutch whites in Michigan. In collaboration with Dr. F. G. Benedict, formerly of the Nutrition Laboratory of the Carnegie Institution, he wrote a paper on "The Food of the Present-Day Maya Indians of Yucatan" and on the metabolism of negroes in Jamaica, B.W.I., and Maya Indians of Yucatan. He is co-author with C. B. Davenport of the book *Race Crossing in Jamaica.* **Mrs. Ruth B. Eckardt,** who holds a master's degree from Cornell University, has assisted Mr. Steggerda for the past two years.

Paul P. Logan, Lt. Col., is chief of the Subsistence Branch Office of the Quartermaster General. His duties include the preparation of estimates for the amount of money annually requested for the subsistence of the Army and to defend such estimates before the Congressional committee; to distribute to the field and maintain a running account of the use of all such money; to exercise supervision over the procurement of subsistence to the extent that policies promulgated by the Quartermaster General are carried out; to assist field quartermasters in the solution of special problems concerned with procurement, inspection, storage or issue; and to maintain contact with other government agencies and private technical associations which have to do with preparation of standards or technological research in the field of foodstuffs.

M. J. Lepore, M.S., M.D. (University of Rochester School of Medicine), is director of the Personnel Medical Department of Columbia-Presbyterian Medical Center, New York. He was American College of Physicians research fellow at Yale University School of Medicine, and New Haven Hospital in 1935–36. He also held a fellowship in physiology at the University of Rochester School of Medicine in 1930–31. Dr. Lepore is also assistant physician at the Presbyterian Hospital and Vanderbilt Clinic, New York.

Katherine D. Spencer, chief executive dietitian, Cook County Institutions, Oak Forest, Illinois, since 1938, graduated from Battle Creek College and received her B.S. degree from Lewis Institute, Chicago. Mrs. Spencer joined the staff of the Oak Forest Infirmary in 1932, the first dietitian to be employed there in many years. She is a member of her state and national dietetic associations, having been a member of the A.D.A. since 1923.

Alta B. Atkinson holds the B.S. degree from Montana State College and the M.A. degree from Columbia University. Miss Atkinson is an experienced and successful administrator, having spent six years on the campus at the University of Michigan, first as house director of the Martha Cook Residence and then as manager of the Michigan League. She was in charge of the food production for five years at the New York Hospital and is now manager of the Commons at Hunter College.

Margaret A. Byrns is a graduate of the University of Missouri and received her student dietitian training at the University of Michigan Hospital in 1931–32. She was appointed dietitian at the Nurses' Residence of the New York Hospital in August, 1932, and at present is dietitian in charge of the Main Kitchen, New York Hospital.